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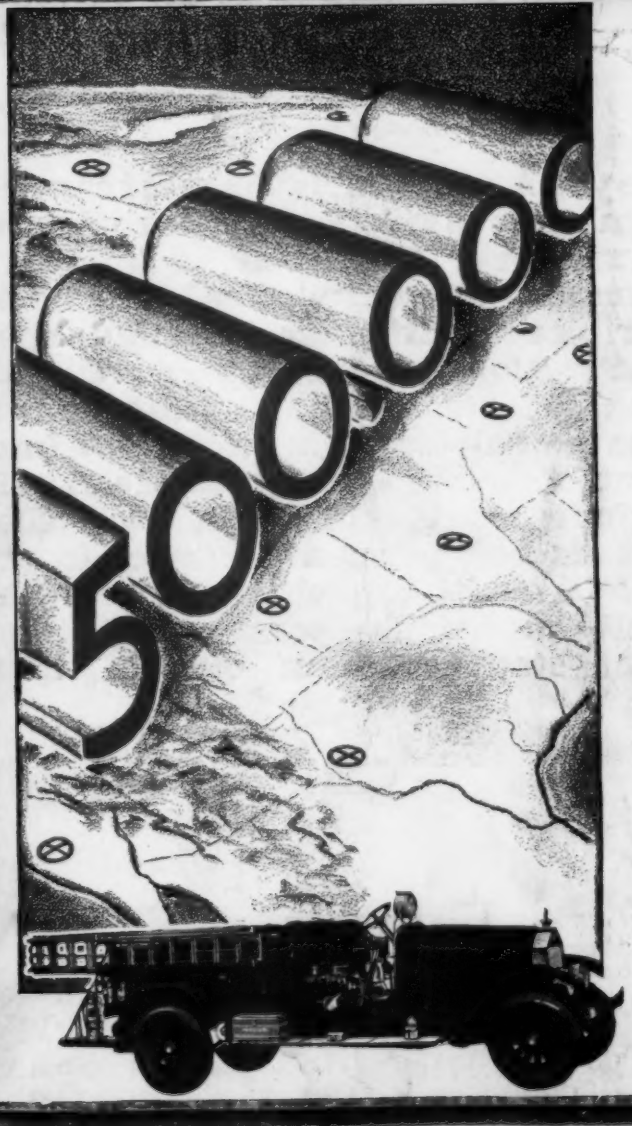
A Consolidation of
FIRE AND WATER ENGINEERING *and* THE FIRE ENGINEER

OCTOBER 3, 1928



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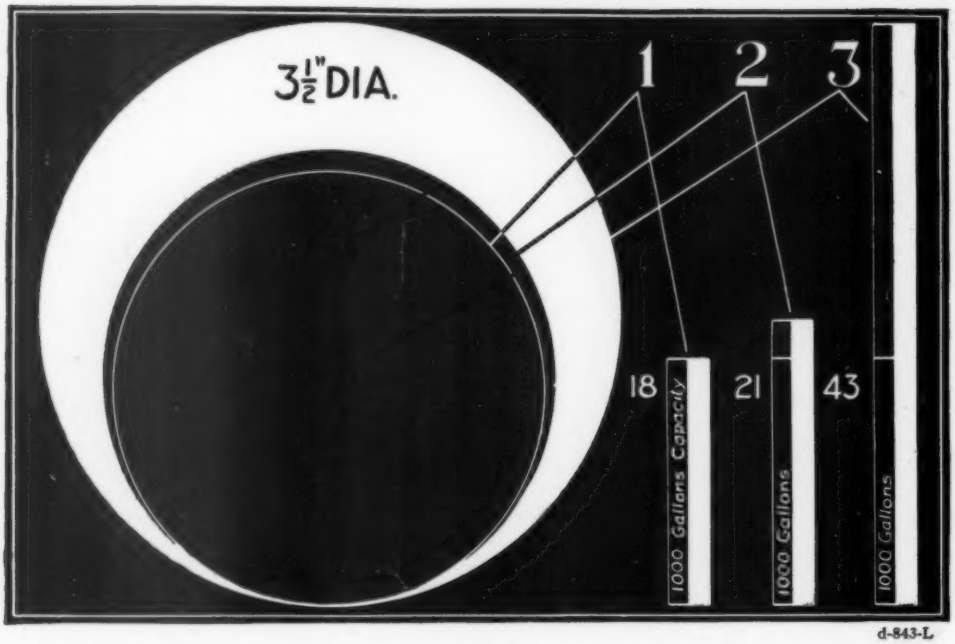

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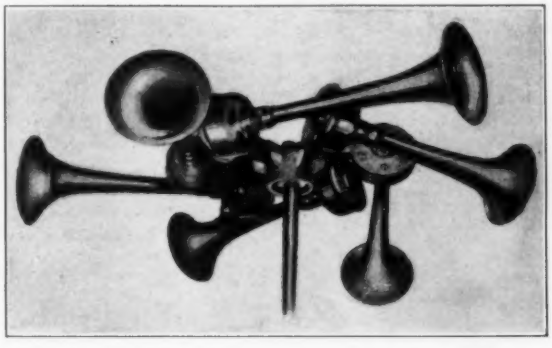

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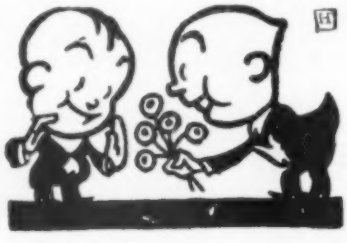

For Ye Editor

AN editor's life is a most uncertain one, as a rule—a combination between praise and blame, bouquets and brickbats.

¶ They tell of the irate and disheveled gentleman who rushed into the sanctum of an editor flourishing a copy of the paper.

"What do you want, Mister?" inquired the office boy.

"I came to lick the editor," replied the irate one.

"Sit down, Mister," said the office boy, "you will have to wait your turn."

¶ But more often, in this office at least, we hear the kind words of praise from our readers and from our advertisers that indicate we are doing a really worth-while job in this important field.

¶ What say you, brother? Want to pick a fight with ye editor, or have you a few kind words to add to those that help to keep us happy?

The Publishers

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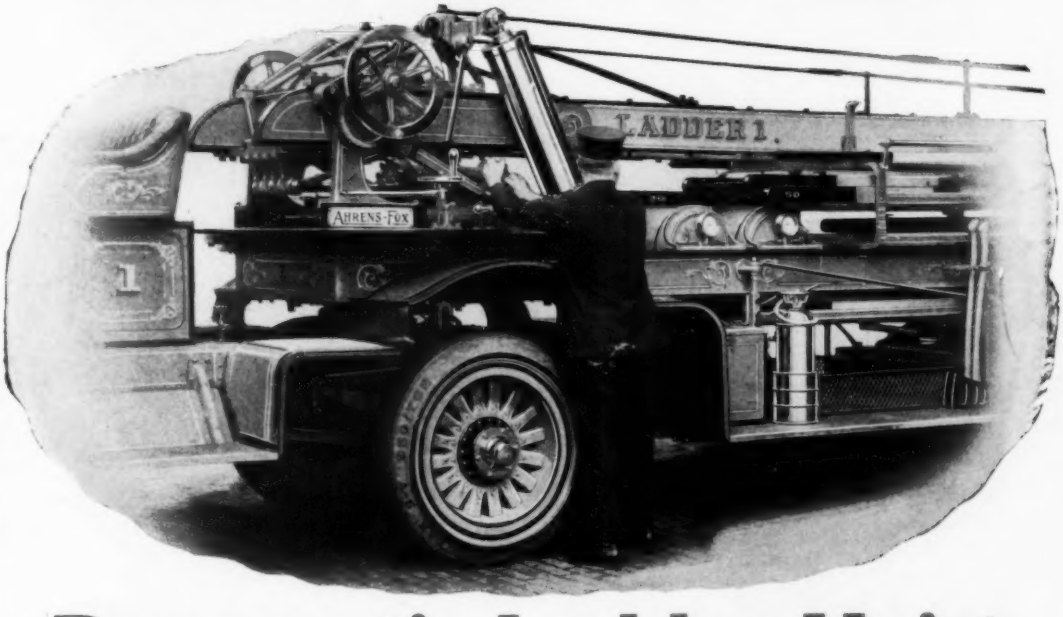
Ahrens-Fox



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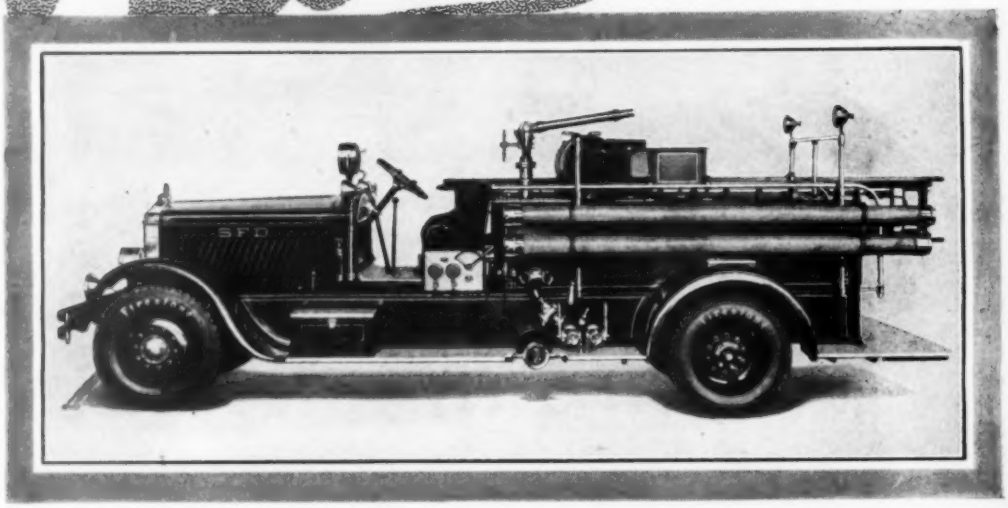

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FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXXI OCTOBER 3, 1928 NUMBER 20

New Standpipe Rules for New York

Board of Standards and Appeals of that City Amends Rules—To be Published Serially in These Columns

By WM. JEROME DALY

THE standpipe-fire line rules of the City of New York, as amended on July 20, 1928, have been issued by the Board of Standards and Appeals and through the courtesy of its chairman, William E. Walsh, FIRE ENGINEERING will publish these new rules serially in succeeding issues.

Peter J. Maher, Fire Prevention Inspector, N. Y. F. D.

Considered the most advanced thought on standpipe installation, the new rules have been printed in a pocket size booklet containing 48 pages and an index. No progressive fire fighter, especially those in cities and substantial sized towns, should be without this important information, which FIRE ENGINEERING will publish from start to finish, beginning with the next issue.

Although promulgated by the Board of Standards and Appeals, the appellate tribunal to which appeals are taken from the administrative orders of the Fire Commissioner, the Superintendent of Buildings and the Tenement House Commissioner, the new rules, in the main, are the result of the efforts of the indefatigable Peter J. Maher, Fire Prevention Inspector, attached to the Division of Fire Appliances and with twelve years of practical experience as a builder, four years in Cooper Union at night and twelve years in the Fire Department, to back him up in one of the most herculean tasks ever undertaken in that branch of the fire fighting profession.

Personnel of the Board

Inspector Maher has represented the Bureau of Fire Prevention before the Board of Standards and Appeals for the past six years. Chief John Kenlon is the senior member of this Board in point of service. Besides the Fire Chief and Chairman Walsh, who is an architect and builder, there are three other members, each of them qualified from a building construction standpoint to sit in judgment on the numerous appeals brought before that body.

Inspector Maher takes the Fire Department's side in about 1,000 cases a year before the Board. It was he who secured the information and the data and conducted the research on which the Fire Prevention Bureau issued its books: "Factory Exit Rules," "Fire Drill Rules" and "Automatic Sprinkler Rules."

Public Hearings Perfect the Rules

While Inspector Maher did the brunt of the work and formulated the skeleton construction of the new standpipe rules, the important finishing touches were applied as a result of a series of public hearings before the members of the Board. Chairman Walsh conducted 20 such public hearings, at which there were present from time to time representatives of the New York Board of Fire Underwriters, the Associated Factory Mutual Companies, a committee of architects and engineers for the New York Real Estate Board, the Building Managers and Owners Association, engineers of fire pumps, valve and pipe manufacturers, hose manufacturers, and at some time or other every Deputy Chief of the New York Department, including Chief Peter C. Spence of the Bureau of Fire Pervention, Assistant

"THESE rules are considered the most advance thought on Standpipe installation. No progressive fire fighter, especially those in cities and substantial sized towns, should be without this important information, which FIRE ENGINEERING will publish from start to finish, beginning with next issue."

Fire Chief Patrick Walsh detailed to Fire Prevention, Assistant Chief Thomas F. Dougherty, dean of the New York Fire College and many more.

Change in Rules Became Imperative

A change in the rules, differing from the old methods of standpipe installation became imperative within the past few years in New York due to the constantly increasing height, area and number of skyscraper buildings, together with three outstanding fires in the upper floors of high buildings in the years 1926-27.

One of these was the blaze in the Equitable Building at No. 120 Broadway in January, 1926, in which the fire extended out of a pipe shaft through a defective self-closing door to the wing of the building on the 32nd floor. The total pressure on the standpipe system that night amounted to several tons.

The second instance was the fire in the office building adjoining the R. G. Dun Building at Broadway and Reade. In the building afire the pipe hangers broke and the first elbow from the tank dropped out, rendering the standpipe system useless.

The latest occurrence was the now famous Sherry-Netherlands hotel fire in April, 1927, at Fifth avenue and 59th street, where the standpipe installation was so incomplete that it was useless and in no condition to be depended upon.

How the New Rules Were Formulated

These three fires caused Chief Kenlon to send for Inspector Maher and the veteran fire fighter started the Fire Prevention man on his way with a memorandum of ten fundamental principals of good standpipe installation and maintenance to be adhered to. Maher started on his task that day and for a year, in addition to his regular duties, he devoted every available minute of his spare time to it. He made dozens of tests and held conferences with the best engineering talent in that field in New York City. Maher designed a complete standpipe system for a building over 1,200 feet high, with four stories below the level of the sidewalk. The drawing he made was 40 inches wide and 14 feet long and it depicted a proposed electrically operated eight-inch relay standpipe and riser segregation system, with location of all checks, tanks, pumps, siamese and regulation of gravity flow and pump pressures.

Chief Kenlon Observing European Fire Methods

Chief John Kenlon in company with Dr. Harry Archer of New York City have returned from Europe where they inspected various fire departments prior to visiting the fire department display at the fair in Turin, Italy. Chief Kenlon is shown here inspecting a fire alarm box in use in Paris, France.

Using this sketch as a model, "fires" were fought at different times from the cellar to the roof of the 110 story building. Fire lines were "broken" both vertically and horizontally, control valves were "closed" and water was "by-passed" while "repairs" were being made. Pumps were put "out of order," exposure fires were considered at all elevations, which brought to light some of the most interesting discussions on wind pressures, air eddies and temperature whirls.

The electrical requirements in the new rules are the result of the most careful research by Inspector William Mulligan in charge of the Electrical Division of the Bureau of Fire Prevention.

What Has Been Provided For

Speaking for all who in any way had a hand in the formation of the new rules, Inspector Maher said to the writer:

"We have given the best that we know of—best in design, with ample water supply. We cut friction loss by better designed valves and fittings. We have given prompt control of each riser at the first floor and every 75 feet above that point. They can shoot or blow the top of the building off, but you can cap any line by a control valve a few stories below. We have provided for elevator service all night long; for red fire line color on all standpipe lines outside the stairway or fire tower to trace the line in case of break; for telephones throughout the building, exclusively for fire line information; simple pump operation and ample means to fight exposure fires and thereby uphold that old tradition—'It shall not pass.'"

Fire Chiefs Less Paid Than Police Chiefs

According to information compiled by the information bureau of the University of Wisconsin Extension Division, municipalities in the state value fire protection less than they do police protection.

Fifty-five small cities of the state provide less than five hundred dollars for a fire chief, eleven places are without a chief, and thirty-seven communities have made no provision for this office.

Several small cities pay from $2 to $5 per fire. One city of 3,500 pays its chief $2 for a day fire, and $3 for a night fire. In other municipalities the fire chief is also linked with such offices as police chief, water works superintendent, inspections, street superintendent, electric superintendent. Only 33 cities pay the fire chief more than $500 a year. Nineteen pay more than $2,000, and six more than $3,000.

Milwaukee heads the list with $6,000. Green Bay, Kenosha, Racine provide salaries of $3,600; Madison $3,300; Superior, $3,180; West Allis $3,000. These salaries nearly correspond to the salaries paid police chiefs in those cities. But whereas 111 cities pay more than $1,000 to their police chiefs, only 29 pay more than that figure to fire chiefs.

Indiana Chiefs Meet in Ft. Wayne

Many chiefs attended the annual convention of the Indiana Fire Chiefs' Association held in Fort Wayne. The convention was addressed by Alfred Hogston, state fire marshal, William Rathburn of the National Board of Fire Underwriters, Ralph Richman and Chief J. J. O'Brien of Indianapolis.

A banquet was held at the Anthony Hotel in the evening. Wives of delegates attending were entertained by theatre parties and tours of inspection in and about the city, and visits through various industrial plants. An old fashioned picnic was held at the Elks' country club.

The new officers of the association are Chief William Briggs, Shelbyville, president; Roy Knoblock, South Bend, first vice-president; Harry Voshell, Indianapolis, second vice-president; Archie McCabe, Muncie, secretary, and John C. Stahlhut, Fort Wayne, treasurer. Next year the convention will be held in Michigan City.

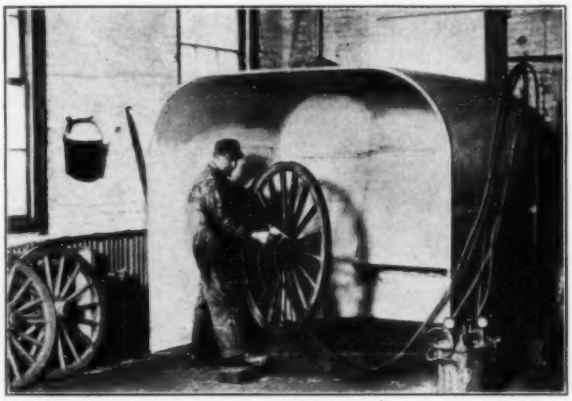
Safeguarding Spraying Processes

Materials of Quick Drying Finishes are Exceedingly Inflammable—Comparative Safety Can be Assured by the Proper Precautions

By J. E. RITCHIE, B.A.Sc., Fire Prevention Engineer, Ontario, Can., Fire Marshal Department *

THERE are few cities in which the Chief of the Fire Department is not brought in contact with the fire hazards connected with industries using pyroxylin spraying devices. The following paper affords some important hints as to safeguarding these processes:

The application of quick drying pyroxylin finishes by spraying has gained such headway in a large number of



An Example of the Modern Finishing Method

With proper care and equipment the finishing industry has banished many of the hazards involved in spra ing work. Speed, thoroughness and quantity production, together with right safety conditions for the work, have given the modern spray preference over the brush.

industries that it must now be accepted as a permanent problem to be met, with the best safeguards that can be devised. That this contribution to modern industry has introduced new fire hazards or old hazards in a more aggravated form, is recognized by every Chief. The dangers of the process are largely due to the highly flammable nature of the materials used, of the vapors and gases so freely liberated and of the solid residue or waste deposits resulting from the operation.

The slightest spark, electrical or mechanical, may start a fire and unless good housekeeping conditions are maintained it will develop so rapidly as to render it difficult to extinguish and as to seriously endanger any persons within range of the vapors and the spreading flash which usually occurs. Sometimes the original flash causes sufficient disturbance to raise a cloud of lacquer dust which, when suspended in the air, gives rise to a more severe explosion. Owing to the nitrocellulose content some residues may decompose under moderate heat, giving off flammable gases. Such decomposition once started, continues with increasing rapidity and sometimes in less than a minute the gases will break into flame, being ignited by the spontaneous ignition of the charcoal residue. Characteristic white fumes usually give warning when such decomposition occurs. We can probably safely assume that the hazards of spraying are more or less familiar to most chiefs but it is possible that some have not a clear conception of how best to guard against fire and accident.

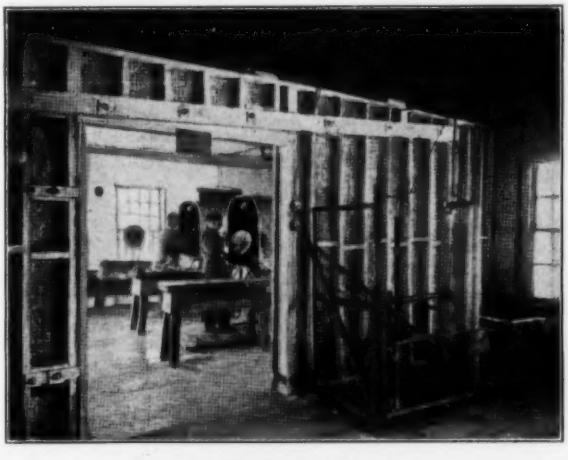
In spite of the severity of the hazard when not under control, comparative safety can be assured by the application of proper principles. In order to eliminate the dangers as far as possible it is obviously necessary first, to eliminate all possibility of introducing any flame or spark and, second, to maintain at a minimum the amount of ignitable or combustible material whether vapors, residue, stock or surrounding construction. This latter includes efficient cutting off of other sections of the building from the spraying department, so that they will not be subject to fire and water loss.

Chief Causes of Fires

Spraying operations are naturally the most hazardous method of applying the finishes because of the much greater quantities of vapor liberated and the greater quantities of residues deposited. Fires usually occur from:

(a) Broken electric lamps and other electrical defects.
(b) Improper or inadequate booths, fans and motors used for removing the vapor-laden air.
(c) "Poor housekeeping" which consists of neglect and carelessness with regard to accumulations of deposits or residues in booths, ventilating ducts, etc.

While the potential hazards are very great indeed, proper installation and proper maintenance of equipment



Spraying-Finishing Radio Horns

The finishing work in this establishment is safeguarded by convenient fireproof and ventilated booths, waterprocfed floor and compressor air tank located outside the immediate labor premises. A fire door and fire resistive wall partition adds to the safety of the building.

correctly designed for the particular work in hand will render the process comparatively safe, both from a fire and health viewpoint.

Main Supplies

Irrespective of the method of application of finishes having a nitrocellulose content, the stock of such lacquers, etc., and other thinners should be kept in a safe

* From an address before the annual convention of the Dominion Association of Fire Chiefs at Kingston, Ont.

place well ventilated, where they will not be exposed to any dangers of ignition and where the containers will not be subject to explosion if a fire should occur on the premises. Only the minimum quantity necessary should be taken from such safe place at any one time. No smoking, open light or spark of any kind should be permitted in any room where they are stored, mixed or applied, whether by spraying, brushing or dipping.

Location for Spraying

Spraying operations should be confined to booths, compartments or rooms from which the vapors can be readily exhausted and in which there is little or no combustible construction. Unless a separate building is used the rooms should be cut off from the rest of the building so that a fire would be localized instead of spreading to other sections. This will entail at least five resistive partitions or walls with intercommunicating openings properly protected. A spraying room should not be located over a stock of valuable contents unless the floor is waterproofed and provided with sufficient drainage to prevent water damage from sprinkler heads or fire hose.

Assuming that the spraying process is protected by

Kitchen Chairs

Thousands of chairs are daily spray-finished, requiring vast quantities of paint, varnish or lacquer to be passed through the sprays in the process. Residue accumulates in large quantities in the booths and on the spray guns and is daily thoroughly cleaned away in accordance with fire safety rules.

fire resistive construction it is evident that safety depends mainly upon:

(1) Efficient ventilation.
(2) High standard of housekeeping.
(3) The elimination of anything which might ignite the vapor, residue or solution.
(4) Fire extinguishing equipment.

Ventilation—Supply of Air

In providing ventilation forced or induced drafts must be created as natural ventilation will not sufficiently dilute the atmosphere. It is essential that the ventilating system be so designed as to prevent any dead pockets or corners where there will not be sufficient change of air to assure proper dilution. It is absolutely necessary that provision be made for a good natural flow of outside air from the opposite side of the room or near the front of the spraying booth, so that an efficient current may be maintained through the exhaust ducts. Unless the supply of air comes from the opposite side of the room back drafts and eddies may occur which nullify or disturb the currents created by the exhaust fan. Open windows in the wrong locations, instead of assisting to eliminate the dangerous vapors may actually be a detriment in permitting cross currents of air to interfere with an otherwise properly designed exhaust system. Spraying rooms or compartments should not be bigger than necessary, as with the same exhaust system the velocity of the air currents will be greater in proportion as the room is smaller. Care should be taken, however, not to make the spray room so small as to increase the liability of explosive mixtures of vapor and air.

Metal Booths

Metal spraying booths are desirable even in fireproof rooms as in addition to localizing fire and water damage they facilitate in a large measure the elimination of vapors and gases. "Dead corners" may be prevented by making the back of the booth funnel shaped, the funnel leading to the exhaust fan and duct. Besides other advantages floor space may be saved and quite good ventilation assured by building the booth with a square back and setting it close to the wall where the exhaust fan is installed and placing distributing plates or baffle plates near the back of the booth. These distributing plates or baffle plates cut down the cross sectional area of the air current and thus increase the velocity of the air as it passes between or around the plates on its way to the exhaust duct, and ensure a good air current through all corners of the booth. Furthermore, the operator is not subjected to such a strong draft.

Much of the spray very quickly solidifies in the air and forms a cloud of small dust particles which are deposited on the plates, thus lessening the quantity of residue carried into the ventilating duct. This simplifies to some extent the problem of keeping the deposits of residue at a minimum as they can be more conveniently cleaned off the plates than from the exhaust ducts.

Exhaust Methods

The general methods of exhausting from spray booths as met with in practice are listed below in order of preference:—

(a) Induced type, i. e., fans and motor entirely outside of booth and ducts.
(b) Fans in duct but motor and main bearing outside and shaft driven.
(c) Motor outside of duct and belt driven fan in duct with belt, bearing and pulley encased.

In the first type a larger motor and fan may be necessary but there is absolutely nothing to ignite the vapors in the duct or to interfere with their free passage to the outside air. Where fans are located in the ducts they will become coated with residue so that an extra load is placed upon the motor with the result that the revolutions per minute will be reduced with a corresponding reduction in the efficiency of the ventilating system. The fan blades should be cleaned off frequently and should be made of rigid non-sparking metal, so that frictional sparks will not be caused if the blades come in contact with the metal duct. Unless the motors operating the fans are safely located away from or separated from the hazard they should be of a non-sparking type designed for hazardous atmospheres.

Exhaust Ducts

Each booth should have an independent exhaust pipe as numerous cases are on record where a fire has spread from one booth to another through a common ventilating duct. Exhaust ducts should be of metal, and as a fire in them will cause them to become red hot, they should be kept free from contact with combustible material. They should be carried in as direct and short

(*Continued on page* 868)

Handling a Fire Against Odds

Unexpected Collapse of Building Spreads Fire Through Adjacent Structure—An Unusual Method of Fire Extension

THE fire described in this article of the series on administration has two points of unusual interest: fire was apparently being successfully confined to one building, when the building collapsed, causing the fire to extend to adjacent printing plant; fire subsequently extended from the building in which it originally started to a building to the south by igniting pent house over elevator shaft and thereby causing burning embers to drop to the bottom of the shaft—starting a new fire.

The city in which this fire occurred is located in the eastern section of the country, and has a population of around 65,000.

The fire department consists of four engine companies, two hose companies and two ladder companies.

The equipment of the engine companies is as follows: Engine Co. No. 1, 750 gallon triple combination carrying 1,000 feet of hose; Engine Co. No. 2, 450 gallon triple combination carrying 1,000 feet of hose; Engine Co. No. 3, 750 gallon triple combination carrying 1,200 feet of hose; Engine Co. No. 4, 750 gallon triple combination, carrying 1,100 feet of 2½-inch hose.

Hose Co. No. 5 carries 1,200 feet of 2½-inch hose, as does also Hose Co. No. 6.

Ladder Co. No. 1 is equipped with an aerial ladder while Ladder Co. No. 2 has a city service truck.

The response to alarms is as follows: First alarm, Engine Cos. No. 1, 2 and 3 and Truck Co. No. 1; second alarm, Engine Co. No. 4, Hose Co. No. 5 and Truck Co. No. 2. Hose Co. No. 6 is left in service, and is brought out only by special call.

Water Supply

The water supply in this city is very satisfactory, there being plenty of good size mains throughout the commercial section and with a pressure of 75 pounds at the hydrant.

In the immediate neighborhood of the fire there were sufficient hydrants to take care of all of the engine and hose companies.

Property Involved

The layout of fire building and surrounding buildings is shown in the sketch herewith.

The fire originated in the paper box plant, a five story structure of about 10,000 square feet area. To the north of this plant was a three story printing plant, while to the south of it was a five story machine shop, engaged in manufacturing small tools.

Other buildings in the immediate vicinity of the fire are indicated in the sketch.

The fire building was occupied on the ground floor by packing and shipping operations. Second and third floors were engaged in manufacturing paper containers while the top two floors were largely employed for storage of paper stock.

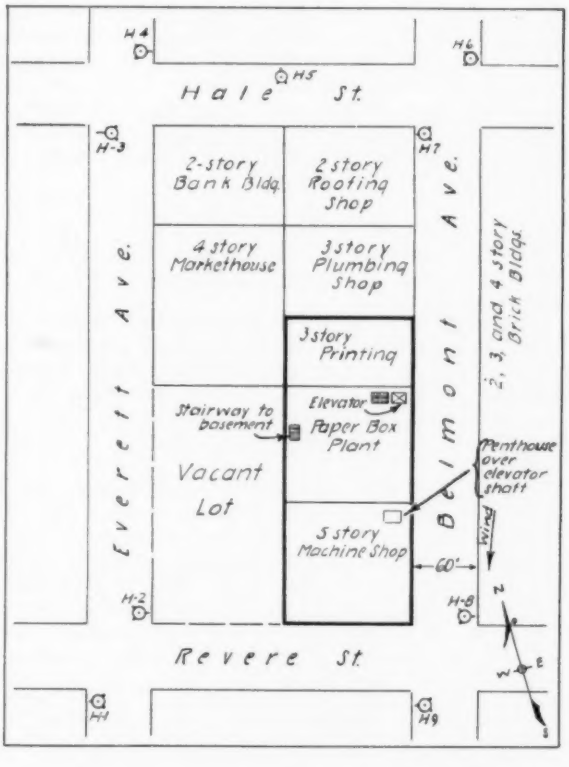
The excess weight of the stock on the top floor probably had a great deal to do with the collapse of the building and resulting spread of fire.

The combination freight and passenger elevator and the stairway alongside were the only available means for employees of the factory to get to the street.

Fire escapes had been placed at the rear of the plant but were subsequently removed to make room for a new fire tower which was to be built.

The Fire

The fire occurred at lunch time when the 150 employees were in the lunch room on the third floor. The fire started in the basement and was discovered by a truck driver who was delivering goods to the plant. With the assistance of the two shipping clerks who were assisting him in unloading, he attempted to extinguish the fire but after working at it for a few minutes decided that it was beyond his control and thereupon went upstairs and 'phoned the fire department. The fire department sent out a first alarm assignment consisting of engine companies Nos. 1, 2 and 3 and truck Co. No. 1.



Upon the arrival of the department, it was found that the employees were all trapped above the fire, some having gone to the roof and the balance remaining in windows on the third floor. The elevator car was in the basement at the time, and it was impossible to get to it. The fire department devoted all efforts during the first ten minutes toward getting the employees out, and this they did by stretching in two lines from the first engine arriving to protect the stairway while the employees were escorted to the street. By this time fire had risen in the shaft, beside involving the basement,

and had extended into the top floor. Engine Co. No. 1, which was placed at hydrant No. 8, had stretched in two lines and these were operating on the ground floor to prevent fire from coming up elevator and stair shafts, as well as protecting stairway to basement in the rear of the plant.

Engine Co. 2 was placed at hydrant No. 7 and a single line stretched to the basement entrance on Belmont Avenue. The fire was too intense in the basement, however, for the stream to enter and it endeavored to operate from the street, but without much effect.

Engine Co. No. 3 was placed at hydrant No. 2 and this line was stretched by way of ladder at the rear of the box factory to the top floor. The windows were covered with heavy wire screen and it was fully ten minutes before the department could effect entrance. In the meantime the fire continued to spread over the top floor so that by the time the stream was finally in operation, the men could not enter this floor. Truck Co. No. 1 placed the ladders for engine Co. No. 3 and removed the wire screen over the window on the fifth floor. This truck company also a little later got to the roof of the paper box plant and opened up over the elevator shaft.

After operating for approximately 15 minutes, it was found that the fire was gaining headway and weakening the ground floor at two points. Fire was also increasing in intensity on the top floor, and due to the fact that water was being discharged in on this floor, and increasing the weight thereon, it was thought best to withdraw the men from the ground floor and operate from the street through the windows.

Second Alarm Turned In

Upon giving these orders, a second alarm was transmitted bringing out engine Co. No. 4, hose Co. No. 5 and truck Co. No. 2.

Hose Co. No. 5 was placed at hydrant No. 9, and a single line stretched to the basement of the five-story machine shop, south of the paper box plant. Finding no fire in the basement, this line was subsequently backed out and brought up to the street floor where it assisted the lines operating on the fire from Belmont Avenue.

Engine Co. No. 4 was placed at hydrant No. 1 and a single line stretched to the roof of the five-story machine shop to operate upon the paper box factory roof, where the fire was already breaking through. After operating within the layout of apparatus for ten or fifteen minutes longer, the north wall of the paper box plant, without warning, gave away and dumped onto the three-story printing plant roof a great mass of burning paper and other materials; at the same time the roof of the paper box plant fell through and a little later a part of the fifth story floor collapsed.

This sudden change in the state of affairs took the department unaware. Before lines could be shifted, fire was burning vigorously in the three-story printing shop, on the top floor. All efforts were then concentrated toward holding the fire from gaining headway in this building but without much success. In devoting attention to this end of the fire, the five-story machine shop at the south was forgotten. As a result, the pent house on top of the machine shop took fire from heat driven by the north wind from the paper box plant, and apparently shortly after embers dropped from the pent house down the elevator shaft, starting fire on the ground floor of the machine shop. This fire was not discovered until it was burning up through the entire five story shaft.

From this point on the operations of the department are not fully known. The chief attention was evidently given toward holding the fire from extending beyond the printing plant, northward, in which the fire department was successful.

The machine shop, however, was completely destroyed as was the paper box plant and the three-story plant.

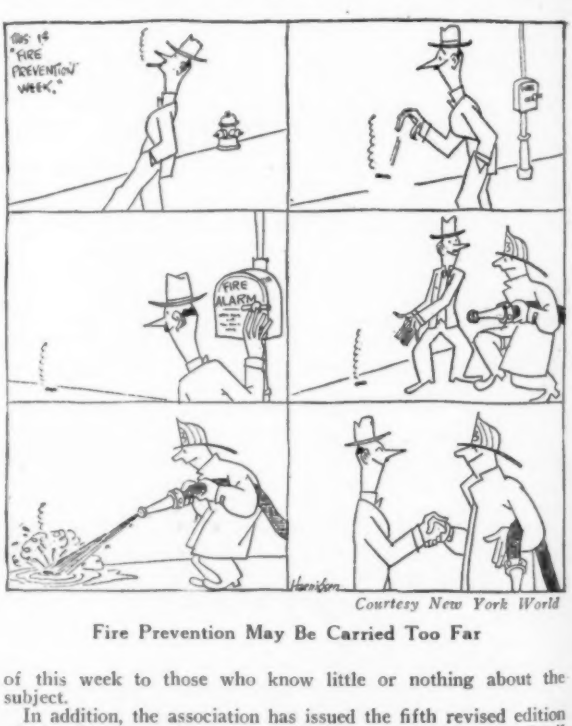
The presence of fairly wide streets and a vacant lot to the west of the fire building helped the department in confining the fire to these three structures.

The Editor's ideas on the handling of this fire will be given in the next issue.

Ready for Fire Prevention Week!

The various agencies that take an active part in planning for Fire Prevention Week have made thorough preparation for the observance of that week which comes this year October 7–13. The week is so arranged that it takes in October 9, the anniversary of the burning of Chicago.

The National Fire Protection Association has printed a four-page leaflet in red and black on "The Story of Fire Prevention Week." It tells of the underlying reasons for the observance



Courtesy New York World

Fire Prevention May Be Carried Too Far

of this week to those who know little or nothing about the subject.

In addition, the association has issued the fifth revised edition of the fire prevention week handbook that describes in detail plans for the guidance of committees and others planning Fire Prevention Week. This book has also proven valuable to teachers and school as well as school superintendents.

There is no set rule in the manner in which the fire prevention message can be forcibly brought home during that week.

A number of cities have placed banners on the side of the ladder trucks so that some slogan would reach the greatest percentage of residents One very effective plan is to place a linen tape across the doorway of each fire house in the city. The newspaper is told of the scheme and plays up the story of how the department hopes that none of the tapes will be broken through fire apparatus responding to calls during that week. People passing by these stations each day, unconsciously look to see if the tape has been severed.

The biggest agency of all for the spreading of propaganda is the school system. Some fireman or fire department officer who can talk before children should be detailed to speak before the various classes, teaching them the value of being careful

(*Continued on page* 866)

WITH THE EDITOR

Competitive Tests at Conventions

When any new line of fire apparatus or extinguishing equipment appears on the market and where there are more than one manufacturer of such apparatus or equipment, competitive demonstrations between the different makes usually result. Such contests may take place at conventions. The value of such comparative demonstrations is questionable. In the first place, unless the conditions under which competitive tests are conducted are precisely the same, the results will mean nothing. If for example, one manufacturer is using one size of pump while another uses another size, or where the motors are not identical as far as rating is concerned, the results of the competition are practically worthless. They tell nothing, and may do an unwarranted injury to one of the competitors. Furthermore the performance of a single unit is no gauge for either commending or condemning an entire line of apparatus or appliances. In the early days of the motor fire engine, such competitive tests were very common. The machines were lined up side by side and put to work. Usually the machine which threw the most water, and continued in operation for the period of the test without evidence of trouble, was the one which was proclaimed (by its manufacturer) the winner. Not sufficient account was taken of the horsepower of the motor, the rated capacity of the machine, the percentage of its capacity which the machine was discharging, etc. Thus an oversize motor, mounted in connection with an oversize pump, might perform, at a moderate rate of speed, in a manner which would outshine the smaller makes. A comparison of the results of such a test, usually made by the winner of the contest, placed the smaller machine and others made by the same company in a very bad light.

This practice has apparently not been eliminated insofar as other types of fire extinguishing apparatus are concerned.

If these contests are to be conducted under the auspices of the International Association of Fire Chiefs, or any other association of fire department officials, and if the manufacturers are going to base advertising claims upon the performance in such contests, it is up to the officials of the association to see that identical requirements are imposed on all contestants. It is the logical function of the Exhibit Committee to get the manufacturers' representatives together, or to have them agree upon definite specifications to be followed in conducting tests which are ostensibly competitive tests. Only in this way can fairness be done to all manufacturers and can the reputation of the association for fair play be maintained.

The Chief's Salary

In Wisconsin they pay their Fire Chiefs less than they do the heads of the Police Departments. This striking fact is brought out in a survey compiled by the University of Wisconsin Extension Division. In this compilation it is shown that the chief of the fire fighting forces is, in many cities of the state, paid a sum much less than an ordinary clerk in a retail store receives for his work.

Unfortunately, Wisconsin is by no means alone in this matter of underpaid officers of the Fire Department. Comparatively few cities in this country recognize the fact that the office of chief of the fire department carries with it more serious responsibilities than almost any other public office in a municipality. Not only the property of the citizens, reaching values well in the millions, but also their lives, are placed in the keeping of this poorly paid individual. He is expected to be in harness, ready for action, at all times of the day or night, every day in the year. On him devolves the safety from fire of the entire community, and upon his head will be visited the blame and censure of public and press, if his department fails in its work in the slightest particular.

And yet it is not deemed necessary to even pay him, in many cases, a salary which the man behind the counter, or the laborer in the ditch would scorn to accept. It is a poor excuse and also an economical fallacy for the city to argue that it cannot afford to pay a decent salary to the Chief. If the Chief is competent—as the majority of the underpaid men in this position are—then it is a disgrace to the city that such low salary is paid.

Viewing the matter from another angle, it stands to reason that a city which recognizes the worth of its Chief and pays him accordingly, will receive better and more enthusiastic service than in the case of the man who—working conscientiously for the good of the service and trying to give his city the best that is in him—is discouraged by the lack of recognition shown by low compensation. So it is not only just, but also good policy, for the municipality to pay their Fire Chief at least a living wage!

Problem of Rural Fire Protection

Rural fire protection service is a subject in which many Chiefs are interested. This is particularly true of the Fire Departments of smaller cities and towns, where the sending of fire companies and apparatus into the country districts to assist those outside of the limits of the municipality, would mean the crippling of the fire protection of the city or town itself. In

many instances Chiefs refuse to give such service, on the ground that they are not called upon to jeopardize the safety of the citizens, in order to assist those outside of the department's jurisdiction.

An alternative plan, and one which is rapidly growing in favor, is for these outlying districts to provide their own fire protection. This is accomplished in some states through the formation of "Fire Districts." Such districts, constituting a combination of the property owners of a section outside of city limits, are thus enabled to finance their purchase of additional fire apparatus, form companies in the district, or make arrangements to have the apparatus housed and manned by the fire department of a nearby city.

The laws of the states vary in some particulars as to the method of constituting such fire districts, but, as a general rule, they are formed by the petition of a certain per cent of the population or property owners of the district to be formed, usually presented to the county commissioners. If there is no opposition, permission for the formation of the district is then given. Usually the county commissioners are given authority to establish rules to govern such districts. In most cases the law provides that bond issues must not exceed an agreed upon percentage of the assessed valuation of the property of district.

This plan of the formation of Fire Districts apparently constitutes the best solution of the rural fire protection problem. It relieves the adjacent city of the necessity for drawing upon its fire forces to protect the outside property, and, at the same time, gives the rural communities control over their own protection, making them responsible therefore. While this will increase the expenses of the outlying districts somewhat, it will, in the long run, constitute a saving for them. In one instance on record, a community fire service plan in a middle western state saved some $160,000 worth of property from destruction by fire in two and a half years. And this, no doubt, can be duplicated in other instances not recorded.

Bridge Over Mississippi River Destroyed by Fire

The only roadway between Arkansas and Tennessee at Memphis was destroyed when fire demolished the bridge over the Mississippi River. The fire burned out all the wooden parts and warped and twisted the steel work. The damage was estimated at $500,000 although the bridge itself is valued at $5,000,000.

MAKE YOUR RESERVATION!

If you have not already made your hotel reservation for the Convention of the Eastern Association of Fire Chiefs (October 15–17) and the International Association of Fire Chiefs (October 17–20) in Philadelphia, you had better do so at once. All available rooms in the headquarters hotel—the Bellevue-Stratford—and those in the vicinity are being rapidly taken up.

Shall Ex-Officers Wear Badges and Uniforms?

The following inquiry has been received from a reader in the midwest, and this publication will be pleased to print the opinions that some chiefs may have on the subject.

"A practice has recently sprung up out here among retired officers of the volunteer fire departments. They purchase their own uniforms and insignia similar to that worn when in active service, but the insignia invariably shows that they are "ex" chiefs. Some of the active officers are objecting to this practice, as seemingly possible to cause conflict of authority or confusion, while others approve of it as a slight honor or reward for faithful service. The latter side of the argument state that war veterans occassionally appear in full U. S. Army or Navy regalia with insignia of their well earned rank; steamboat captains and other officials retain their titles until dead.

"We would appreciate knowing what the practice is in your section of the country and also your opinion as to which side has the more logical argument."

New York Selling Football Tickets

The drive to obtain money through the sale of tickets for the inter-city football games between the teams of the New York and Los Angeles Fire Departments, the Sunday after the I. A. F. C. convention, for the benefit of the Honor Emergency Fund of the New York Department, was started last week by Honorary Deputy Chief W. W. Cohen, chairman of the Mayor's Committee on Municipal Athletic Activities. He addressed scores of firemen at meetings.

Chief Cohen told the firemen who are the nucleus of the ticket selling committee that the campaign to enhance the principal of the Honor Emergency Fund has the approval of Mayor James J. Walker and Fire Commissioner John J. Dorman, and that it is the only drive under Fire Department auspices that has such official approval.

It was explained to the firemen and they were told to go back to their respective quarters and impart the information to their comrades that the coming gridiron contest on Sunday, October 21st at the Polo Grounds, where the general admission will be $1, is the first drive of its kind in four years by the firemen of this city.

WM. JEROME DALY.

George Richardson Again at Work

George J. Richardson, secretary-treasurer of the International Association of Fire Fighters, is again at his desk after regaining his health following a period of illness starting June 7. He was troubled with a severe attack of intestinal flue, followed by pneumonia and pleurisy.

He was sufficiently recovered to attend the annual convention of the association held in Milwaukee a couple of weeks ago. This meeting is believed to be the largest and most successful gathering ever held by the organization.

Fire Alarm Boxes to Be Marked with Lights — Each of the 105 fire alarm boxes in Bayonne, N. J., will be marked with a red light on the poles above the boxes.

Elizabeth, N. J., Has New Superintendent — John Grouss, Jr., was promoted to superintendent of the fire alarm system in Elizabeth, N. J. He fills the post vacated by William L. Hance, who retired because of ill health.

Life-Saving Unit Added in Albany, N. Y. — Albany, N. Y., now has a truck equipped with pulmotors, acetylene torches and burners, electrical saws, gas masks, gas helmets, divers' outfit, rubber equipment for handling high tension wires, asbestos suits and other accessories for saving life.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Battalion Chief Hydraulics Question

To the Editor:

I will appreciate very much your trouble if you will answer in an early issue the question below, which was given in a recent examination for battalion chief in New York City.

Question: A 1,000 gallon pumper is supplying a water tower 55 feet high through two lines of 2½-inch hose, each 150 feet long from a wye connection on a 3-inch pumper outlet; and is also supplying, from its other side, a single 2½-inch hose line 200 feet long with a 1¼-inch nozzle.

At the water tower 500 gallons are being delivered at 50 lbs. nozzle pressure.

What will be the nozzle pressure on the single line?

Note: Disregard the friction loss in the tower and the wye connection.

Respectfully yours,

M. C.

Answer: Note that the question does not give the diameter of the tower nozzle. This will have to be found before the problem can be solved by the usual formulas.

The formula to be used for finding nozzle diameter, when the discharge and nozzle pressure are known, is the discharge formula and is as follows:

Discharge $= 29.7 \times d \times d \times \sqrt{p}$, where "d" is nozzle diameter and "p," nozzle pressure.

Now we substitute in this formula the various values which we already know and we get:

$500 = 29.7 \times d \times d \times \sqrt{50}$

$500 = 29.7 \times d \times d \times 7.07$

Next get the symbols "d" on one side of the equation and all of the figures on the other.

$$d \times d = \frac{500}{29.7 \times 7.07} = 2.38$$

If $d \times d = 2.38$, then $d = \sqrt{2.38}$ or 1.54 inches.

This is the exact nozzle diameter which would be required to discharge 500 gallons per minute at 50 pounds nozzle pressure.

However, no such nozzle is at present employed in the New York Fire Department, and the nozzle of standard size nearest to this figure is 1½-inch. Therefore, a 1½-inch nozzle must be in use.

Now we can solve for engine pressure necessary to give the nozzle pressure (disregarding for the time being the back pressure in the tower).

Engine pressure = nozzle pressure $\times$ (1.1 + KL)

K, for two 2½-inch lines of hose and 1½-inch nozzle, is 0.135.

L, the number of 50 foot lengths of hose in the line, 150 ÷ 50 = 3.

Then E. P. $= 50 \times (1.1 + .135 \times 3)$

$= 50 \times (1.1 + .405)$

$= 50 \times 1.505 = 72.25$ pounds.

The back pressure due to the 55 foot head of water in the tower is equal to $55 \times 0.434 = 23.87$ pounds.

This must be added to the engine pressure as determined above, to get the actual pressure at the engine necessary to overcome friction loss in hose and give nozzle pressure on tower.

72.25 + 23.87 = 96.12 pounds, the corrected engine pressure.

From here on the balance of the problem is simple. It is only a matter of determining the pressure at the 1¼-inch tip on the 200 foot line of 2½-inch hose, where the engine pressure is 96.12 pounds.

Nozzle pressure $= 96.12 \div (1.1 + .248 \times 4)$

Where K = .248 and L = 4

N. P. $= 96.12 \div (1.1 + .992)$

$= 96.12 \div 2.092 = 45.8$ or 46 pounds approximately, the nozzle pressure.

Note: In solving for engine pressure supplying the tower, the two 2½-inch lines may first be reduced to a single line by dividing by 3.6 and then the problem solved (in this case K will be 0.505 and L, 0.833).

The difference in these two methods of solution will be approximately 3 pounds at the engine.

Another way, which does not receive full credit in New York City, is to find the friction loss in the two 150 foot lines of 2½-inch hose and add this friction loss to the nozzle pressure plus the back pressure in the tower, giving the engine pressure.

Solving by this manner we find that the friction loss in the two parallel lines of 2½-inch hose totals 22.9 pounds. Adding to this the back pressure, 23.87 pounds and the nozzle pressure 50 pounds we get as the engine pressure, 96.77 pounds which compares very favorably with 96.12 as secured by the first method above.

Factors for 1½ Inch Hose

To the Editor:

The wide-spread use of 1½-inch hose in this department, and in fact all along the coast, has made it necessary to obtain some data regarding factors and constants in the solving of pressure problems with this diameter hose. If it is possible, the officers of this station would like to know the factors for changing 1½-inch hose to an equivalent in 2½-inch hose. Also, the constants for ½-inch tip, ¾-inch tip, ⅝-inch tip, when used on 1½-inch hose. If you, at some date, will give these facts, it will be greatly appreciated.

Respectfully yours,

ED. J. CUNNINGHAM.

Answer: In order to avoid confusion it is always best to reduce your 1½-inch hose to 2½-inch before solving for nozzle or engine pressure. This is done by dividing by the conversion factor 0.074. In other words, if you are changing a length of 1½-inch hose to 2½-inch, you divide the length of 1½-inch hose by 0.074, and the answer will be the equivalent length of 2½-inch hose.

Then to find the value of "K" for the nozzle sizes as stated, on 2½-inch hose, you proceed as follows:

"K" for a given size nozzle on 2½-inch hose equals $d \times d \times d \times d \div 10$, where "d" is the diameter of the nozzle in inches.

Now to find these values of "K" for the three specific sizes of nozzles you have given on 2½-inch hose:

K for ½-inch nozzle $= .5 \times .5 \times .5 \times .5 \div 10 = 0.00625$

K for ¾-inch nozzle on 2½-inch hose $= .75 \times .75 \times .75 \times .75 \div 10 = 0.0316$.

K for ⅝-inch nozzle on 2½-inch hose $= 0.625 \times 0.625 \times 0.625 \times 0.625 \div 10 = 0.01525$.

(Note: To find values of "K," for the nozzles given, on 1½-inch hose, we divide the above calculated values of K, for the nozzles on 2½-inch hose, by 0.074.)

Chimney Fires, Etc.

To the Editor:

I would greatly appreciate your answering the following questions:

1. At a recent chimney fire I saw the contents of a fire extinguisher poured down a chimney when only soot was afire, and mentioned this to one of the men who told me that their captain ordered them to follow such a procedure at all chimney fires. On another occasion they emptied a 2½ gallon foam extinguisher

down a chimney. It has been my opinion that this is not the proper method, as water poured down a chimney when afire will confine the gases, which will in turn ignite, blowing out the breastwork of the chimney upon coming in contact with an open flame. I will appreciate your giving me the correct procedure for extinguishing such a fire.

2. How would you instruct your men in the proper manner in opening and closing fire hydrants.

3. "A" claims when two engines are pumped into a four way deluge set, two lines from each engine, that best results are obtained when there is equal pressure on the engines.

"B" claims if one engine had 200 feet of hose and the other had 400 feet that it would make no difference. Give correct solution.

4. Find K for ⅞-inch, 2¼ and 2½-inch tips on 2½-inch hose.

L. G.

Answer 1. It is quite common practice to use soda and acid extinguishers for extinguishing chimney fires. There is little or no danger of explosion from this practice. In the fire place, chimney fires usually have plenty of air which means that the soot in the chimney on burning throws off carbon dioxide gas, which is in itself an extinguisher of fire. Were it possible to confine a sufficient amount of this gas within the chimney, the fire would extinguish itself. However, as this is not practical, some other means must be resorted to. The use of the soda and acid extinguisher has as its chief disadvantage the spreading of soot and water out into fire places, etc., which are connected to the chimney. There is, of course, far less damage likely to result from the use of extinguishers than the use of water streams.

The latest method of handling chimney fires is to destroy the soot by employing chimney cleaning powder which is thrown on a hot fire and permitted to remain there for approximately half an hour. The gases thrown off by this powder result in complete destruction of the soot which means that there will be no subsequent fire at an early date after the fire department gets through the job.

But as far as danger of explosion is concerned, there would be none whatever to worry about through the use of chemical extinguishers.

Answer 2. The chief point to consider in opening and closing fire hydrants is to so operate them as to cause no damage to the hydrant, to the hose connected thereto, or to hazard the lives of the men operating a line attached to the hydrant. The hydrant should be opened slowly and closed the same way. The object in closing it slowly is to prevent water hammer or ram, which might be occasioned by shutting it off quickly.

In opening a high pressure hydrant where separate gates are provided on each outlet, the main valve is opened completely first and then the independent valves subsequently. If one of the independent gates were opened first, and then an attempt made to open the main valve, the water would flow out from the hydrant as rapidly as it passes the main valve. This would prevent the balancing of the pressure on the top and bottom of the valve and make it exceedingly difficult to open the valve—resulting in undue strain on the valve operating stem. In shutting down a high pressure hydrant the independent gates are closed first, and the main valve closed last, for the same reason as stated above.

Answer 3. If the engines are of equal size, and if the hose layouts are precisely the same, then the best results are secured by operating the engines at the same pressure. But if the layouts are different, for instance, if one layout is longer than the other, then the engine on the longer layout would have to be operated at a higher pressure than the one nearer the deluge set if the same discharge were desired from each. Where there is a great difference in the length of lines there is a possibility of the pressure created by the nearer engine tending to close the clapper valve on the deluge set inlet from the other engine, which might partially check the supply from the second engine.

This much may be said, however: In practical fire department operation it is not likely that either engine will be cut off by the other due to the difference in pressure. The engine operating nearer the deluge set will deliver more water, but at a lower pressure, while the engine at a greater distance, due to the greater friction loss in the hose layout, will deliver less water at a higher engine pressure, but at the same pressure as the deluge set.

Answer 4. The value of K for any size tip on 2½-inch hose is found by multiplying the diameter of the tip by itself three times and dividing by ten.

In the case of the ⅞-inch tip, we get: ⅞ x ⅞ x ⅞ x ⅞ ÷ 10 = .0587, which is the value of K for ⅞-inch tip on 2½-inch hose.

In a like manner K for 2¼ and 2½-inch nozzles would be found to be 2.56 and 3.91 respectively.

MASSACHUSETTS STATE FIREMEN HOLD CONVENTION IN HAVERHILL

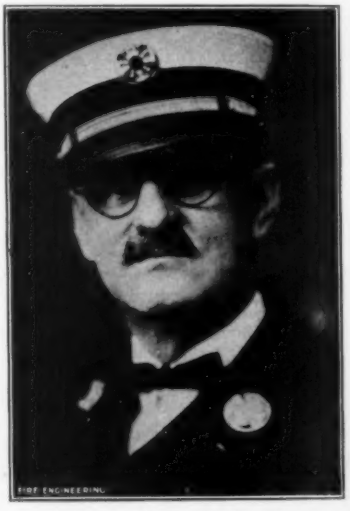
Seventeen Bills Affecting Firemen Passed by Legislature—Rain During Meeting Causes Cancellation of Baseball Game

By HARRY BELKNAP

CHIEF WILLIAM H. HAWKINS, of the Haverhill Fire Department, was elected president of the Massachusetts State Firemen's Association at the 49th annual convention of the organization which was held in the City Hall, Haverhill, Mass., on September 18, 19 and 20.

At the opening session on Tuesday, addresses of welcome were delivered by Mayor Fred D. McGregor, of Haverhill; Samuel J. Levis, president of the city council; James M. Costello, commissioner of public safety; and Forrest V. Smith, president of the chamber of commerce.

The response in behalf of the association was made by Chief William C. Mahoney, of Peabody. Secretary Daniel J. Looney reported that there are now 8,400 active members of the association. Captain Henry Hilton, of Gloucester, and W. F. McGrath, of Cambridge, were appointed as a committee on credentials. Deputy Chief James S. Koen, of Salem, president of the association for the past year, directed the meetings at the convention.



Chief William H. Hawkins, President of Association

Edward J. Coveney, of Boston, reported as commissioner for the $18,000 firemen's relief fund, stating that during the year injury benefits to the amount of $4,560.50 had been paid and children's benefits amounting to $9,126.00, making a total of $13,686.50.

Capt. John H. Day, of Lynn, reported for the auditing committee. M. J. McGonagle, of the legislative committee, stated that forty-one bills affecting firemen had been introduced in the Massachusetts legislature and of this number the following seventeen had been passed:

An act authorizing the town of Wilmington and the town of Tewksbury to pay certain sums of money on account of deaths of firemen killed in performance of duty.

An act authorizing the city of Lowell to pay a certain sum of money on account of the death of a fireman caused by injuries received and illness contracted in the performance of duty.

An act providing for establishment of reserve forces in the fire departments of cities.

An act relative to the powers and duties of certain local authorities as to fire prevention.

An act regulating the parking of vehicles near apartment houses.

An act relative to the terms of garage and certain other licenses, permits, and registrations, and the fees therefor.

An act relative to fire prevention.

An act authorizing the town of Winchendon to establish a fire department.

An act providing retirement allowances based on annuity and pension contributions for employes of the city of Newton.

An act relating to the powers of the Melrose Firemen's Relief Association.

(*Continued on page* 867)

LUMBER YARD FIRE STARTS MANY SPRINKLERS IN NEARBY BUILDINGS

Lumber Located in Times Square High Value Section—Smoke Attracts Large Crowd —Stock of Wearing Apparel Damaged

LUMBER stored in the Wright Lumber Co. yard in W. 39th street, between Broadway and Seventh Avenue, New York City, developed into a three-alarm fire, and caused a number of sprinklers in adjacent buildings occupied by the garment industry to operate and flood the stock. The lumber yard is somewhat out of the ordinary. It is located on ground in an area where property is valued by the millions. It is hemmed in on two sides by skyscrapers, on a third side by a 3-story brick building, and the fourth side is adjacent to the street.

Fire was discovered about 4:30 p. m. on Saturday after the force of thirty employees had left. No one was on duty. The yard office was part of a group of one- and two-story buildings.

By the time the first fire company had arrived, the flames had gained considerable headway. Apparently, the fire had been burning for some time undetected in the lumber piles, two stories high in some places. The first captain to arrive immediately turned in two other alarms. By that time the smoke was very dense, and flames were licking their way up the sides of the adjoining structures. There was a possibility of flames bursting through the windows and spreading to large stocks of merchandise stored on various floors of the skyscrapers.

The third alarm brought Deputy Chief "Smoky" Joe Martin who took command. He ordered hose lines run to the tall buildings and streams directed from there to the burning lumber.

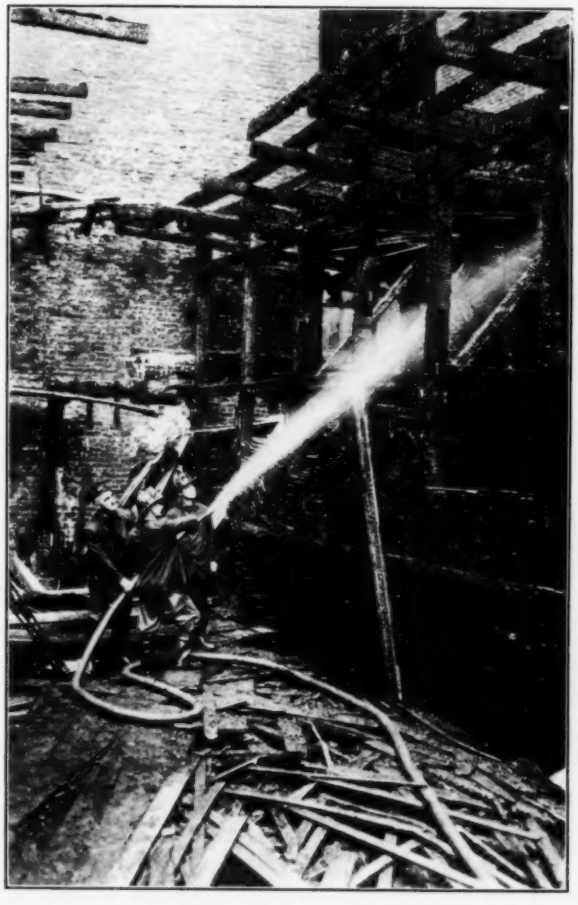
Employees of one of the adjoining buildings, desiring to help, ran a hose line to the roof, twenty-five stories from the street, and directed the water on to the burning lumber. By the time the water reached the street, it was merely a fine spray, of little value in fire-fighting. After several firemen in the street were thoroughly drenched by the amateur firemen, the line was ordered shut down.

The heat caused sprinklers to operate. In one building, water from the sprinklers cascaded down twelve floors and damaged a large stock of ladies' garments. Other buildings suffered a lesser amount.

A telephone cable at the back of the lumber yard was damaged and many telephones were placed out of service.

Smoke was driven down Broadway by a light breeze. The entire section was filled with the odor of burning pine. Police established fire lines two blocks away from the lumber yard to hold back the large crowd that was attracted by the heavy smoke. The fire companies did not return to their quarters until 7 p. m.

Lumber Yard Develops Into Three-Alarm Blaze



Remains of the Stacks of Lumber at the Wright Lumber Co. Yard

Explosion Damages Brooklyn Pier

Fire in the hold of the Aconcagua of the South American Steamship Co., tied up at a pier in Brooklyn, N. Y., believed to have been started from spontaneous combustion, threatened shipping, endangered the lives of one hundred seamen and damaged the pier.

A number of stevedores were on board unloading a cargo of about fifty tons of nitrate of soda that is used in the manufacture of gunpowder. Twelve of the crew were below decks when the first explosion occurred. At first it was believed that these men were injured, but upon checking up it was found that they were safe.

The fire started in No. 5 hold, near the nitrate of soda shipment. The first explosion tore a hole through the bottom of the ship. This was followed by a series of minor explosions among the sacks of the chemical.

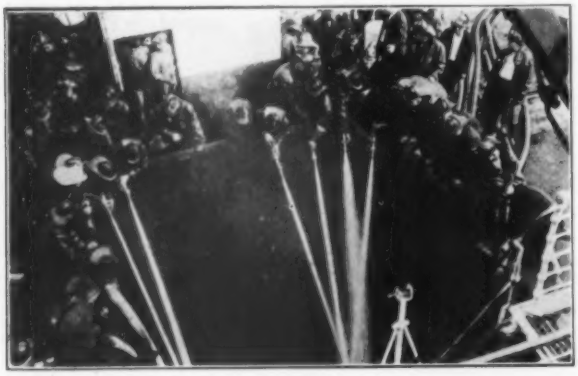
Four fire boats responded to a second alarm and poured tons of water into the ship. Several tugs of the Dalzell Towing Company stood by to pull the vessel out into midstream to prevent flames spreading to other ships and igniting thousands of dollars worth of cargo along the piers.

The water which leaked through the hole in the bottom and that which was pumped from the fireboats caused the ship to list to port, which made it all the more difficult for the firemen in fighting the fire.

There was only one casualty. A stevedore struck his head against a hoist in getting off the ship when the fire started. He was treated for cuts on the head and left side and was taken to St. Peter's Hospital.

The boat will have to go to drydock before the extent of the damage is determined, and her next sailing will be delayed. The Aconcagua sailed from Valparaiso, Chile, on Aug. 22. She is scheduled to sail to South America soon. The ship carries both passengers and freight, having accommodations for 105 people.

Registered at Valparaiso, the ship sails under the Chilean flag. It was built in 1922 by the Scott Shipbuilding and Engineering Company, at Greenock, Scotland, and is operated by twin-screw propellers driven by four steam turbines. The gross tonnage is 7,309.



Firemen Directing Streams Into the Hold of the Aconcagua

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to latter investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending September 21

NEW HAVEN, CONN.—Bldg. of Atlas Mfg. Co..... 40
GREENTOP, MO.—Several business buildings..... 25
UTICA, N. Y.—Bldg. occupied by Reynolds Chemical Corp.... 25
TULAROSA, N. MEX.—Plant of Tularosa Tie & Lumber Co.... 80
MOBILE, ALA.—Bldgs. of Lores Canning Co..... 80
LINCOLN, NEBR.—Roundhouse of Missouri Pacific R. R..... 25
BLYTHEVILLE, ARK.—Store of Geo. Taught Mercantile Co.. 25
THROOP, PA.—Several buildings destroyed..... 25
LAKE CORMORANT, MISS.—Business property destroyed.... 80
LAKE WORTH, FLA.—Packing plant, A. H. Thomas Co..... 125
WATTSBURG, PA.—Business and residential property..... 125
GENEVA, N. Y.—Factory of William Smith destroyed..... 35
SAYREVILLE, N. J.—Whse. Morgan Lumber & Supply Co.... 70
GRAND RAPIDS, MICH.—Main bldg. State Soldier's Home.... 40
HORSENECK BEACH, MASS.—The Breakers, recreation hall.. 25
CLEVELAND, OHIO.—Walworth Laundry plant damaged.... 40
RICHMOND, VA.—Home of Irving Bierer, Winchester Rd.... 25
ADIRONDACK, N. Y.—Watch Rock Hotel destroyed..... 80
INDIANAPOLIS, IND.—Boys Preparatory School damaged... 25
WOODLAWN, N. Y.—Cold storage plant of W. Miller..... 25
ROCHESTER, PA.—Rom Grocery Co. and adj. property..... 80
LOON LAKE, N. Y.—The Wall pavillion and cottages..... 25
MINNEAPOLIS, MINN.—Mill "A", Washburn-Crosby Co.....160
LAMPASAS, TEX.—Store of Higdon, Senterfitt Co..... 80
LAKE CITY, S. C.—Whse. of Graveley Tobacco Co..... 40
RICHMOND, IND.—Bldg. of Coe Printing Co..... 50
CLARIDGE, PA.—Central Hotel and adj. property..... 30
PHILADELPHIA, PA.—Bldg. of Ferguson Chemical Co..... 25
LOS ANGELES, CAL.—Bldg. of Los Angeles Can Co..... 250
FINLEYVILLE, PA.—Three mine tipples destroyed..... 80
LOUISVILLE, KY.—Kilns of Norman Kiln Drying Co..... 125
COCHRANTON, PA.—Business establishments destroyed..... 80
DENVER, COLO.—Whse. of Liberty Packing Co..... 30
MIAMI, OKLA.—Ore mill at Patty C mines, northeast..... 80
BAILEY, TENN.—Chickasaw Creamery destroyed..... 25
GRAFTON, W. VA.—Mill of Excelsior Mantel Co..... 250
SUTTON, W. VA.—Plant of Monor-Edgar Chem. Co..... 150
PHILADELPHIA, MISS.—Bldg. of Crossfield Ice Co..... 50
OGDENSBURG, N. Y.—Becker-Moore Mfg. Co. plant..... 80

Week Ending September 28

ROCKPORT, ILL.—Business bldgs. damaged..... 25
BROWNSVILLE, PA.—Bldgs. at Allison Mine No. 2..... 35
EAU CLAIRE, WIS.—Bldg. of Hanson Furniture Co..... 40
NORTH TONAWANDA, N. Y.—Clothing store of W. A. Richart. 25
PLAINS, MONT.—Whse. of McGowan Commercial Co..... 40
ROSEBUD, TEX.—Farmers' Union Whse. destroyed..... 125
McCOMB, MISS.—McComb Wholesale Grocery destroyed..... 80
CICERO, ILL.—Factory of the Rome Co..... 125
WEBSTER CITY, IOWA.—Plant of Jewell Produce Co..... 40
PRINCETON, KY.—Plant of J. A. Stegar Tobacco Co..... 55
BALTIMORE, MD.—Whse. of Knickerbocker Ice Co..... 80
CORDELE, GA.—Plant of Cordele Lumber Co..... 35
CINCINNATI, OHIO.—Property of Levine Brothers..... 25
FRESNO, CALIF.—Standard Planing Mill destroyed..... 45
DOS PALOS, CALIF.—Pierini store and residence..... 25
LOS ANGELES, CALIF.—Exhibition bldg. damaged..... 40
BARTLETT, TENN.—Business property destroyed..... 80
TACOMA, WASH.—G. M. Harty Lumber Co. plant..... 125
CAMERON, TEX.—Property of R. L. Battle..... 25
GARYVILLE, LA.—Lyon Lumber Co., Mill and adj. property.. 400
BINGHAMTON, N. Y.—The Daker Bros. mills destroyed..... 80
ENGLETOWN, PA.—Barn owned by Robert Supplee..... 35
CORINNA, ME.—Hotel Really destroyed..... 45
DAYTON, OHIO—Barracks, National Military Home..... 25
PENN YAN, N. Y.—Residence of H. H. Kendall, Lake Keuka.... 25
CALHOUN, GA.—Crown Cotton Mills destroyed..... 25
MOULTRIE, GA.—Sawmill of David Jenkins Sons..... 25
KENDALLVILLE, IND.—Factory of Kendallville Brush Co.....125
NEW ALBANY, IND.—Residences and business establishments.. 75
GRACEFIELD, QUE.—Post office and warehouse..... 25
PHENIX CITY, ALA.—Kaylin Brick Co. property..... 35
FORT TOTTEN, N. D.—Barn on Indian Reservation..... 25
WINCHESTER, KY.—The Bush Hospital destroyed..... 55

N. J. Firemen Convene in Atlantic City

Over two thousand firemen and five hundred chiefs attended, respectively, the annual meetings of the New Jersey State Firemen's Association and the New Jersey State Fire Chiefs' Association at Atlantic City, N. J. The firemen convened September 21 and 22, while the chiefs met the evening of the 21st.

Chief Ross B. Davis of Philadelphia, president of the International Association of Fire Chiefs spoke at the meeting.

General Bird S. Spencer, was ill and could not attend the firemen's convention. He had always attended such gatherings in the past, and his absence was very noticeable. The question of pensions was referred back to the executive committee.

The officers of the state firemen's association and the state fire chiefs' associations were re-elected.

General Spencer commences his fiftieth term as president of the firemen's organization. The other officers are Evan T. Benners, first assistant; Ralph T. Holmann, second assistant; T. Howell Johnson, treasurer; William Exall, secretary; George T. Everett, financial secretary and Charles E. Burr, auditor.

The officers of the New Jersey State Fire Chiefs' Association are Charles Greenfield, Kearney, president; Charles Nickerson, Wildwood, vice-president; F. A. Trowbridge, Morristown, secretary and A. Lembeck, Demarest, trustee.

Bluffton, Ohio, Has New Pumper—A 500-gallon pumper has been delivered to Bluffton, Ohio.

Eastchester Board to Buy Apparatus—The board of fire commissioners of Eastchester township, N. Y., have visited a number of communities to gather information before buying fire apparatus. The purchase of fire apparatus has been delayed for some time.

It is Not So Easy to Fight a Cotton Fire

Fire broke out in stacks of baled cotton, piled at Pier 14, East River, New York City, awaiting shipment. The bales had to be pulled apart to make sure that no fire was left smouldering. It is a task devoid of any thrills, especially on a muggy day such as when the fire occurred.

How Cities Conduct Inspections

Fire Prevention Inspection by City Firemen Proves an Important Activity in Department—Thorough Field Work Means Low Losses*

IN a rapidly changing world, it is natural that fire department practices have been constantly enlarged and improved. The efficient fire chief of today supervises many operations in addition to the very necessary function of fire extinguishment. Such matters as the physical training of the firemen, the study of the chemistry of fire and explosions, modern drill school evolutions, practical hydraulics, ventilation, building construction, first aid, salvage operations, the investigation and prosecution of incendiarism, and the valuable work of actually preventing the occurrence of fires through up-to-date conservation activities, dignify the fire force as a scientific and essential service to the community.

Experience has proven that one of the most important activities under the supervision of the busy modern fire department chief executive is the operation of a well organized inspection system as a part of his fire prevention activities, and frequently the fire prevention committee of the local chamber of commerce can be of considerable assistance in establishing such a service where it does not now exist, or in improving the one already in operation.

That such work intelligently done is a sure method of reducing fire waste is indicated by an examination of the reports of those cities which have done such remarkable work as to win prizes in the Inter-Chamber Fire Waste Contest. In almost every instance the record of the prize winning cities places emphasis upon the work done by the firemen.

Direct Benefits

There are several direct benefits to be derived from regular inspections conducted by the Fire Department:

1. By the actual removal or correction of fire hazards many fires are prevented, which if they had occurred would have meant, in addition to the actual destruction of property, an unnecessary expense to the city for extinguishment, the jeopardy of the lives of both citizens and firemen and the possibility of a sweeping and disastrous conflagration. It is then a service of real conservation.

2. Such a system, properly conducted, has a valuable psychological and educational effect upon the owner or the occupant of the property inspected, in acquainting him with the fire hazards found, and with the needs and problems of the local fire department itself.

3 The local fire service becomes intimately familiar with the exact layout of every building inspected, as well as the peculiar hazards existing in each. This information, in the event of fire, naturally enables the fire fighters to handle the situation with the utmost efficiency instead of making blind guesses as to what to do, often resulting in death or serious injury.

With this information in hand, it will be of advantage to investigate the various successful methods by means of which the results of such inspection work may be accomplished.

Two Methods of Operation

In general, there are two methods by means of which this work is carried forward. The larger cities, as a rule, maintain a fire prevention bureau separate from the fire extinguishing force, while in the smaller communities the operations are conducted by the actual fire fighters—in many instances by the fire chief himself where there are no others available.

Fire Prevention Bureau

There is considerable difference in the working details of the various fire prevention bureaus conducted by fire departments in our metropolitan centers, and there probably is no one standard system which would be applicable to all cities. In order to arrive at some sort of idea as to how these fire prevention bureaus function, a questionnaire was recently sent to the chiefs of the fire departments of the following cities:

Baltimore, Boston, Chicago, Cincinnati, Columbus, Detroit, Denver, Grand Rapids, Indianapolis, Lincoln, Louisville, Memphis, Milwaukee, Omaha, Portland, Ore., Providence, Richmond, St. Joseph, Mo., Seattle, Trenton, Tulsa, Wilmington.

Of these 22 cities, 20 maintain a fire prevention bureau aside from the extinguishing force. In larger centers of population the very volume of the work necessary, the application of the local fire prevention code, the complexity of the peculiar hazards of many industries and other occupancies require the full time services of a group of men assigned to such work.

All except three have subordinate fire department officials as the chief officer of the bureau. Some of these titles are fire marshal, battalion chief, chief fire prevention engineer, assistant chief, captain, and manager. Naturally the chief officer of the fire prevention bureau should be well versed in the technique of fire prevention, not only as regards the many individual fire hazards themselves, and their proper safeguarding, but he should also be thoroughly familiar with the organization and operation of private fire brigades, all types of fire drills, exit facilities (including fire escapes), private fire alarm system, automatic sprinkler installations and operation, and such matters. He should, of course, be an executive respected by his subordinates. He should also have sound judgment in his approach to the occasionally troublesome citziens, some of whom are successfully handled through diplomacy, while others require great firmness.

Fire Limits

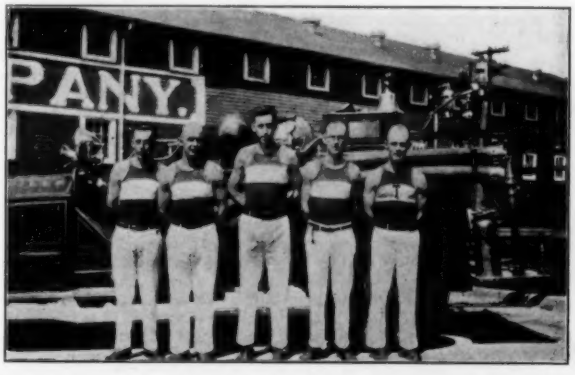
Certain areas in most municipalities are known as the fire limits. These are fixed through ordinance of the local government and usually embrace territory where only certain types of construction or occupancy are permitted. The areas thus prescribed usually are provided with extra fire precautions, because of the customary presence of high values and congestion. There may be several such prescribed limits in one municipality

Details of Systems in Use

As to the frequency of inspections *within the fire limits,* the questionnaire indicated that one bureau makes regular weekly inspections, three monthly, nine quarterly and three semi-annually. Six cities said that daily inspections were made, but this is understood to have meant that inspectors were daily at work rather than that each building received a daily inspection. Wherever possible to do so it is recommended that at least quarterly inspections be made within the fire limits, for the most serious consequences of an outbreak of fire are likely to occur here.

Four make daily inspections *outside the fire limits,* one weekly, one monthly, two quarterly, six semi-annually, four annually, one "on call" and three do not make any. Considerable objection to the inspection of dwellings has arisen in some territory, not only from the occupants themselves, but also because of lack of men to perform this phase of the work; and in such cases it is recommended that the same end be attained by the use of home inspection blanks furnished to school children once or twice each year. Home inspections accomplished in this manner have produced remarkable results.

With two exceptions inspectors are rotated from one district.



Company Wins First Prize at State Convention

The fire department of Thomasville, N. C., won first prize at the state firemen's convention held in New Bern in August. Members of the winning team are from left to right, H. E. McFadden, Fred Sullivan, L. C. Godbey, Paul Clinard and Howard Sullivan.

* Abstract of bulletin issued by the Insurance Department, Chamber of Commerce of the United States.

to another. This custom broadens the knowledge of the inspectors, and has a tendency to prevent oversights in too frequently inspecting the same building. Five inspect all classes, sixteen all except dwellings and one business houses only. Fifteen inspect and test sprinkler equipment, two inspect equipment, one inspects valves only and four do not inspect or test. Eighteen inspect standpipes and four do not.

Before being assigned to inspection work, firemen in all except three cities receive special schooling under trained inspectors or experienced firemen. As fire prevention is a science in itself, it is very important that inspectors be given a thorough training before attempting to do inspection work. The knowledge which the chief officer possesses as indicated above should be passed on to all of the inspectors. It is obvious that any but intelligent recommendations made by the bureau will only result in friction with local citizens. Just as in any other business, the inspector must be thoroughly familiar with his job.

In nine cities inspectors have police power and in one city they have restricted powers. In one case the fire marshal and the assistant only have police power, and in another instance, the chief inspector and fire investigators have this power. In ten cases inspections are made by officers, in ten others by both officers and privates. In two cases no inspections are made. In eighteen instances inspections are made on city time and in three they are not. In one case they are made "on and off."

In all but six cities fire drills are conducted in city schools by firemen, the intervals varying from monthly to annually. Previous to attempting to supervise or criticize fire drills, the inspector should thoroughly acquaint himself with various types of drills, means of egress, and the dangers of each if improperly designed.

All except one city have a follow-up system. Re-inspections, mailed notices and check-ups by fire marshals are the usual custom. In some instances those who do not comply are referred to the state fire marshal's office. The card systems for keeping inspection records vary greatly, but almost all of the cities mentioned use such a method. Some are very elaborate with special printed blanks for use in connection with various occupancies. These blanks should be designed to meet local conditions.

A permanent fire prevention bureau can accomplish much, especially if backed up with an efficient modern building code, proper ordinances regarding fire hazards and authority for compelling corrections where resistance is met.

Inspections by Fire Extinguishing Force

It is sometimes difficult for moderate-sized cities to maintain a separate branch of the fire service for fire prevention exclusively and in extremely small cities this arrangement is very rare indeed. But every city having a fire department of any kind should see to it that regular inspections are made and that the inspector has authority to secure the elimination of existing fire hazards. Even where the fire chief is the only full time paid man on the department, a reasonable portion of his time should be spent in doing this valuable work.

State Laws and Fire Department Inspection

That fire prevention inspections on the part of the fire department are important is further indicated by study of the existing fire marshal laws of some of our states. As four states have decreed by law that local fire departments do inspection work, a glance at certain sections of the laws in these is interesting.

In Indiana—"It shall be the duty of the chief of the fire department of each city of the first, second, third and fourth class, in addition to his other duties, to inspect all buildings, premises, and public thoroughfares, except the interiors of private dwellings, for the purpose of ascertaining and causing to be corrected any conditions liable to cause fire. Such inspection shall be made at least once in three months—in such fire limits."

A section of the Kentucky Laws reads—" * * the chief of the fire department is required in person or by officers or members of his fire department designated by him for that purpose to inspect all buildings * * * except the interiors of private dwellings." The inspection is to be "made once each six months in territory served by the fire department, and not less than once in three months within the fire limits, and oftener as the Chief may order. A written report shall be made and kept on file."

In North Carolina—"It is the duty of the insurance commissioner to require in all municipalities of the state that such officers * * * make in their respective municipalities annual inspections of the buildings therein, and quarterly inspections of all premises within the fire limits, and report in detail the results of their inspections to the insurance commissioner upon blanks furnished by him."

The Wisconsin Law says—"Such chief of the fire department is required, by himself or by officers or members of his department designated by him for that purpose, to inspect all buildings, premises, and public thoroughfares, except interiors of dwellings, for the purpose of ascertaining and causing to be corrected any conditions liable to cause fire, or any violations of any law or ordinance relating to the fire hazards or to the prevention of fires." This is to be done not less than once in three months within the fire limits, and at least once in six months in all territory served by such fire department. Written reports must be kept on file "in the manner and form required by the Wisconsin Industrial Commission. Such inspection shall be subject to the supervision and direction of the Industrial Commission * * * ."

In most of the other states the law is not so specific. In some, the local chiefs "may inspect" (Illinois, Iowa, Vermont), or "shall inspect upon complaint" (Alabama). In Maine the municipal officers shall annually elect an "inspector of buildings," who at least once in three years shall "inspect chimneys," flues, funnels, stoves, furnaces, boilers and boiler connections and heating apparatus in all buildings within his jurisdiction." The Oklahoma law requires the fire chiefs to inspect certain buildings "which have and maintain fire escapes, at least every three months." Other states make local fire chiefs deputy state fire marshals with power to inspect. Thus it is seen that some state legislatures have appreciated the value of inspections by firemen.

An attempt has been made in this bulletin to inform local fire prevention committees that fire department systems of inspection have great possibilities in the conservation of our wealth, and it is obvious that with such work intelligently administered and conducted, there is much likelihood of a considerable saving in human life, not only as regards the public, but that of the firemen themselves.

A suggested ordinance for establishing a bureau of fire prevention and defining proper powers and duties has been adopted by the National Board of Fire Underwriters and the National Fire Protection Association.

Ready for Fire Prevention Week!

(*Continued from page* 858)

where fire is concerned, the proper way in which to turn in a fire alarm, some information about the saving of life, and so forth. After each talk, pamphlets or other literature can be left for the children to take home. In that way, each home has some information on this very important subject.

Although cities have staged fire prevention parades, in some municipalities there are regulations prohibiting such displays.

Chiefs have secured cooperation from department stores in the larger cities. Window dressers have arranged special window displays for this occasion. There can not be too many agencies and individuals cooperating with the department during this week.

Illinois, through the office of the state fire marshal, has issued special posters and literature calling attention to the great fire losses throughout the country.

During the past few years, observance of Fire Prevention Week has acquired a national flavor. Each year, the President issues a special proclamation calling upon the people to give serious thought to the matter of reducing losses to lives and property by fire. It is very probable that this official document will be read in schools as part of the weekly or daily assembly.

Fire chiefs are well acquainted with the statistics of how many homes are destroyed throughout the country by fire each minute, how many schools go up in smoke, how many churches are lost, how many women and children are killed and other figures that speakers can mention. He has heard them so often that they have become boresome and meaningless to him. But the chief is overlooking a very important fact. Although such figures are tiresome, perhaps to the chief who is concerned with the more materialistic side of the profession, such information is new and probably interesting to the lay public. With the cooperation of the local editor, it may be possible to print short paragraphs in display type, playing up one part of these statistics.

Once the plans are started for Fire Prevention Week, civic organizations, and others interested in the welfare of their community are bound to cooperate.

Underwriters Form Local Arson Bureau

A special arson bureau department to investigate all suspicious fires in New Jersey, Westchester County and Long Island, has been formed by the National Board of Fire Underwriters. The offices of this bureau will be at 85 John street, New York City.

The staff of special investigators will be in charge of Chief Special Agent Joseph F. Gillece. The men will cooperate with Chief Fire Marshal Thomas F. Brophy of the New York Fire Department, and also with the police and fire departments of communities within the Metropolitan area.

Illinois Firemen Hold Convention

The forty-first annual convention of the Illinois Firemen's Association was held in LaSalle, Ill. President Thomas J. Ruddy of Joliet presided at the meetings.

Papers delivered on the afternoon of the first day were "Fire Hazards and the Importance of Precautionary Measures," by Chief Herman J. Lohmann, Aurora; "Testing Fire Apparatus, Its Meaning and Value, by C. W. Hauth, engineer, Illinois Inspecting Bureau, Chicago; discussion on the use of 1½-inch hose and the benefits from the use of flare signals.

Memorial services were held in the evening.

On Wednesday morning, Frank R. Morgaridge of the National Board of Fire Underwriters, New York, delivered a paper on "Arson Investigations." Other talks were "The Past, Present and Future of Fire Prevention," by Chief Albert Herring, Murphysboro, and an address by S. L. Legried, state fire marshal.

H. L. O'Brian, Chicago, spoke on "Human Element Versus Protection."

The association voted to issue an identifying membership card to its members.

President Ruddy presided at the banquet that was held on Wednesday evening at the Knights of Columbus rooms.

On Thursday, Frank C. McAuliffe of the Chicago fire patrol, presented a paper on "Salvage Work," and August W. Thade, Galena, past president of the Illinois Firemen's Association, spoke on "The Life of a Volunteer."

Next year the convention will be held in Joliet. The new officers are Albert Hasse, Peru, president; F. P. Haderlein, Carlyle, first vice-president; Roy W. Alslip, Champaign, secretary; Simon Kellerman, Jr., Edwardsville, treasurer; Elmer W. Weidler, Mt. Olive, historian, and an executive board consisting of T. J. Ruddy, Joliet; Pearl Smith, Madison; M. J. Myers, Mt. Pulaski; Sam Hunt, Jacksonville; Joe Valentine, Rock Island; Louis Reich, Riverdale; Harry Hosutt, LaSalle, and Albert Herring, Murphysboro.

Cuba Proud of Her Fire Record

Less than two hundred fire alarms were turned in in Havana, Cuba, during the past twelve months. The records show 198 alarms of which only thirty-nine reported fires of any importance.

The thirty-nine fires totalled losses of $336,850, of which $260,000 occurred in the fire last March at the Standard Oil Refinery at Regla, across the bay from Havana. Not one fatality during the year was due to fire, and the eight casualties reported were victims of their own fear for the most part.

A fire alarm in Cuba is called, in Spanish, a "beginning." Few fires get past the "beginning" stage, with the result that Havana boosters claim one of the best fire insurance rates in the world.

In commenting on the excellent record of the Havana fire department, Colonel Leopoldo Diaz de Villegas, its chief, said credit was due to the thorough training of the men but that Cuban construction methods also were largely responsible for the reduction of fire hazard.

Oil Explosion Felt Within Radius of One Mile

When a gas well at Santa Fe Springs, Cal., exploded recently, the force of the blast was felt within a mile radius. The fire threatened nearby derricks in the Southern California oil region.

Many of the buildings of Havana are of stone, brick or concrete construction throughout. Floors are of composition marble and rugs are not generally used. Walls similarly are innocent of hangings—the whole effect enormously reducing the damage of fire through defective electric wiring. Havana is built without back yards, thus eliminating the accumulation of rubbish.

THOMAS SANFORD.

Tacoma Orders New Fireboat

The Coast Line Shipbuilding Co., of Tacoma, Wash., has received an order from that city for a ninety-six foot fireboat with pumps capable of delivering 10,000 g.p.m., against 180 pounds pressure.

In addition the city is considering the purchase of three 1,000-gallon combination pumpers equipped with monitor nozzles.

Bids are being invited for the construction of a new fire station. Specifications have been distributed to those interested in placing estimates on the cost of installing new fire alarm equipment. A new fire alarm building will be erected.

Massachusetts Firemen Hold Convention

(*Continued from page* 862)

An act relating to the amount of pension payable to firemen in cities.

An act authorizing municipal appropriations for certain travelling and other expenses of municipal officers and employes.

An act subjecting the office of chief of the fire department of the city of Gardner to the civil service laws.

An act relative to appeals from certain orders of the State Fire Marshal.

An act relative to the appointment by a town board of any of its members to another town office or position.

An act authorizing the town of Blandford to take over the properties and assume the obligations of the Blandford Fire District.

An act providing for the payment of compensation to widows and children of policemen and firemen killed in the performance of duty.

A buffet supper was served at the new Water Street Firehouse of the Haverhill Fire Department and there was a theatre party in the evening for the members of the Ladies' Auxiliary of the association.

Rainy weather caused the cancellation of the proposed baseball game between the Newton and Haverhill fire department teams. The clambake, which was the closing feature, was held in the State Armory instead of outdoors.

The speakers at the Wednesday session were Ex-Mayor Albert L. Bartlett, of Haverhill; Fire Commissioner Eugene C. Hultman, of Boston; Dr. Maurice W. O'Connell, of the Boston City Hospital; Mayor W. Harry Monks, of Fall River; Chief Daniel F. Sennott, of the Boston fire department; Theodore A. Glynn, ex-fire commissioner of Boston; Elliott H. Goodwin, state commissioner of Civil service; Adjutant Floyd L. Keller and Staff Captain William Fox, of the Salvation Army; Mayor Malcolm E. Nichols, of Boston; Mayor Corbett, of Lowell; I. F. Richardson, of the Vacuum Oil Company; Mrs. Charlotte K. Crocker, of Nahant, president of the Ladies' Auxiliary; and the Rev. Harry E. Hurd, of the Center Congregational Church, Haverhill, who delivered the memorial address, following the reading of the roll of deceased members for the past year.

The importance of reporting any injury or illness, however slight, was brought out by Dr. O'Connell and Mr. Coveney, of the relief fund commission. More rapid promotion to assure younger officers and yearly physical tests for all firemen were advocated by Commissioner Goodwin.

In the evening there was a vaudeville entertainment and dance in the auditorium of the City Hall.

At the closing session of the convention on Thursday morning routine business was transacted and it was voted to have the legislative committee draw up a bill to protect the drivers of motor apparatus by providing liability insurance.

The election of officers resulted as follows: President, Chief William H. Hawkins, Haverhill; 1st vice-president, Joseph J. King, Lawrence (re-elected); 2nd vice-president, F. T. J. McNamara, Swampscott (re-elected); secretary, Daniel J. Looney, Boston (re-elected); treasurer, M. Joseph Manning, Milton (re-elected); Board of Directors, Michael J. McGonagle, Boston, and Louis Shea, Fall River; sergeant at arms, William A. Adams, Worcester, and commissioner for $18,000 firemen's relief fund, Edward J. Coveney, Boston.

It was voted to make the terms of office five years for the secretary and treasurer instead of only one year as previously.

Safeguarding Spraying Processes

(*Continued from page* 856)

a course as practicable to the outside of the building and should terminate in a location where the discharge will not endanger property. Deflectors or windbreaks are desirable on the ends of exhaust pipes to prevent wind from interfering with the efficacy of exhaust systems. Where elbows or changes of direction are necessary heavy deposits of residue are likely to occur. In such cases clean-out doors should be provided to facilitate the removal of the residue, and in all cases exhaust pipes should be so installed and built as to be easily accessible for cleaning of the interior.

Housekeeping—Stock and Lacquers

Sprayed articles should be immediately removed to a separate drying department instead of being allowed to accumulate in the spraying room where they would add fuel to any fire which might break out and render it more difficult to extinguish. The supplies of all lacquers and thinners necessary in the spraying room should be kept in substantial metal containers with closed or automatically closing covers so that they would not become involved in any outbreak of fire. Where the gravity system is used the container should be suspended from an incombustible support with metal cable but never by means of a rope or other support which would be weakened by a fire so as to permit the container to fall and spill the liquid.

Frequent Cleaning

Because of their extreme inflammability, waste deposits and lacquer dust should be kept at an absolute minimum. The entire spraying department should be cleaned at regular intervals and all booths and ventilating ducts should be thoroughly cleaned daily or oftener if necessary.

It is particularly important that a thorough cleaning should precede any alterations or repairs. It is advisable to thoroughly wet down all surfaces before starting cleaning operations and no one should be allowed to enter any stack or duct until it is free of vapor and wet down.

School of Instruction at San Francisco

Modern fire department administrations consider a fireman as a product of some school of instruction. The candidates are no longer entrusted to absorb their knowledge from older men during the course of the day's work. They must go to school the same as others desiring to learn a profession. The photograph shows the San Francisco fire department school. In the foreground are a few of the appliances that the men must learn to handle.

Scrapings.

Only non-sparking scrapers or fibre brushes should be used as steel implements are liable to cause sparks. The scrapings and sweepings should not be placed in piles on the floor but should be deposited in metal receptables and wet down and then removed from the building to a place of safety. They should never be burnt under boilers as there is a possibility of them causing an explosion.

Aids to Cleaning

Efficient cleaning of a booth is facilitated by having it so constructed as to present flat smooth surfaces. A good practice is to line the booth with heavy manilla paper which can be removed and replaced when necessary. When distributing plates or baffle plates are used in a booth they will be easily cleaned by immersing them over night in a bath of caustic soda and then rinsing them with cold water. If the surfaces to be cleaned are covered with a very thin coat of grease before the residue is allowed to collect the residue and grease can be very easily scraped off. Where dry dusty residues result from spraying the sticky coat of grease has a tendency to trap or hold in the booths some flammable dust residue that would otherwise be removed by the air currents. The use of liquid soap compounds applied with a spray gun, that dry smooth and non-adhesive, presenting a dry but soluble surface, is advised in preference to the grease.

Prevention of Ignition

In addition to taking the precautions previously outlined with regard to electric motors, all electric wiring should be placed in conduit and all switches should be placed where they will be separated from the hazard. Electric lights should be in vapor-proof globes protected against damage. They should be so situated that they will not become covered with residue and the light should be reflected into the booth so that there need be no temptation at any time to introduce lights on extension cords. It scarcely seems necessary to state that open flames and smoking as well as the carrying of matches should be prohibited.

Fire Protection—Sprinklers

The best and most reliable fire protection is afforded by the installation of a good sprinkler system. Where sprinklers are placed in a booth a deflector not less than 2½″ or more than 5″ deep should be installed across the top of the open face of the booth so as to deflect water downward in the form of a curtain and thus confine most of the discharge in the booth and help to prevent the flame from igniting materials outside of the booth. Sprinklers should be kept clean and any of them which are so placed that they might get covered with any deposits should be protected with tissue paper which should be changed regularly. An exhaust duct, unless very short should also be equipped with some sort of automatic water nozzle with sufficient discharge to entirely protect it.

First Aid Appliances

If the installation of a proper sprinkler system is not feasible the best first aid appliances possible should be provided. For the general protection of spray booths and their exhaust systems, particularly where pyroxylin lacquers are used a standard equipment of small hose or

soda-acid extinguishers should be installed. Where the spraying hazard is extensive or particularly severe a 40 gal. chemical engine should be provided to ensure bringing a fire under control. Chemical extinguishers so installed as to operate automatically, are very much preferred over those which are operated manually.

Small Scale Operations

Small scale spraying operations conducted in many occupancies present the same inherent hazard of flash fire as do the more extensive operations. Owing to the smaller amounts of inflammable materials and residues present and the more limited areas immediately involve the danger of an extensive fire is relatively less. It must not be inferred, however, that there is not the same necessity of observing the principles of safety. Thorough ventilation and faultless housekeeping as well as elimination of all sources of ignition are still necessary. It may, however, be a much simpler matter under these conditions to isolate or cut off the process from other parts of the building. For the spraying of small articles, convenient bench booths may be constructed employing the same principles of ventilation as with the larger booths. These bench booths render the process much safer and cleaner in addition to maintaining much healthier conditions for the operator.

Knight Chief at N. Tonawanda

Fred F. Knight was appointed chief of the fire department at North Tonawanda, N. Y., to fill the vacancy caused by the death of Chief Charles F. Doebler.

Chief Fred Knight

Mr. Knight joined the fire department in 1905 when eighteen years old as torch boy. He was appointed to the paid department on March 1, 1913 and three years later was promoted to second assistant chief. When Chief Doebler died on August 16, he was named acting chief. On September 11, Mr. Knight was appointed chief of the department.

Chief Knight is highly esteemed by his men. He has figured in a number of rescues at fires, and in 1923 was severely burned while attempting to rescue a man from a burning building.

The vacancy of second assistant chief, caused by Chief Knight's promotion has not been filled as yet.

North Tonawanda is located in the northwestern section of New York state between Niagara Falls and Buffalo. There are a number of commercial interests of great value to protect against possibilities of fire.

Massachusetts Chiefs Have Ladies' Day

The annual Ladies' Day outing of the Fire Chiefs' Club of Massachusetts was held at the Adams House in Marblehead on September 12.

Ex-Chief "Jack" Adams served one of his famous shore dinners and acted as host to the chiefs and their ladies.

There was a good attendance in spite of rather inclement weather. Most of the chiefs went to Marblehead with their guests in automobiles.

HARRY BELKNAP.

Department Organized in Vista, Cal.—The fire department in Vista, Cal., has been completely organized.

Pearse Helps Entertain Inspectors

Delegates to the annual convention of the western section, International Association of Electrical Inspectors were entertained by a spectacle arranged by Julius Pearse and the Denver Fire Department.

Julius Pearse

The program was divided into three parts—the outdoor show, the vaudeville entertainment, and the wrestling and boxing matches.

Music was furnished by the Union Pacific railroad band. The El Jebel Drum and Bugle Corps presented an illuminated drill as spectators lined both sides of the street near the city auditorium. Then came the fire department—sixty men pulling an ancient piece of fire apparatus. Behind this was the chief's car of other days, drawn by a racing horse.

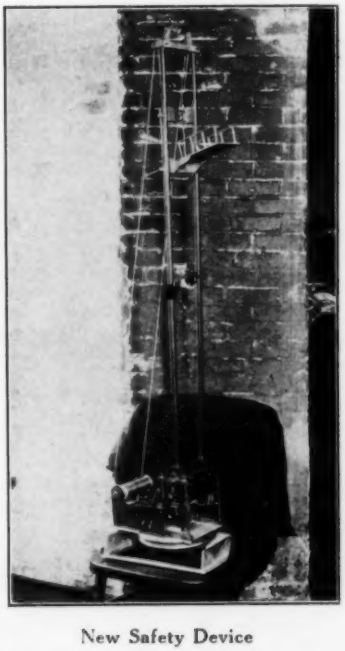
The streets were cleared. Down sped the car of Chief Healy, at a sixty-mile rate. In quick succession twenty-one pieces of fire apparatus followed, as well as four chiefs' cars. As soon as the last car rushed past, the entire crowd entered the auditorium where the vaudeville show and boxing events were arranged.

In the afternoon, picked firemen gave an exhibition from a four-story tower. Two fire companies gave an exhibition of water polo, which may sound novel for so dry a country as Denver. The huge ball was pushed about by several hose streams in charge of competing companies.

Mr. Pearse handled the entertainment well. He is branch manager for the Eureka Fire Hose Manufacturing Co.

Device Invented for Rescue Work

A mechanism designed to do away with the use of ladders and nets in rescuing persons from buildings, has been invented by a resident of Harrison, N. J.



New Safety Device

The mechanism is mounted on a truck. Supports for the tower consist of two telescopic poles of steel, each five sections or 220 feet in length. After being hydraulically raised, it is locked in place as a safeguard. The poles can be inclined to an angle of forty-five degrees and rotated by a turntable device.

The supports serve as rails on which the movable safety platforms run up or down. The platform is of steel with a heavy support which keeps it balanced in a level position when the tower is bent at any angle. The platform is moved by steel cables strung over the top of the tower and attached to a drum below. Every movable part is operated by the motor of the truck.

The ladder can be used to rescue twelve persons at the same time. It can be raised and swung into position in ten seconds.

The platform can also be used to attach hose lines and then be used similar to a water tower. It can hold sixteen lines of hose.

Siren Installed in Uniontown, Pa.—A siren has been placed in Uniontown, Pa.

FIRE DEPARTMENT ACTIVITIES

Hubbard, Ia., May Buy Apparatus—Hubbard, Ia., is raising funds for the purchase of Boyer apparatus.

Westport, N. Y., May Buy Fire Apparatus—Westport, N. Y., is considering the purchase of fire apparatus.

Sirens Ordered for Menlo Park, Cal.—Two fire sirens have been ordered for Menlo Park, Cal.

Pumper Delivered to Bluffton, O.—A 500-gallon pumper has been delivered to Bluffton, Ohio.

Fire Apparatus Delivered to Gaffney, N. C.—Fire apparatus has been delivered to Gaffney, N. C.

Chardon, O., to Purchase Apparatus—Funds are being raised in Chardon, Ohio, for the purchase of fire apparatus.

Glenfield, Pa., Reorganizes—The fire department in Glenfield, Pa., is being reorganized.

Haledon, N. J., to Have New Fire Alarm—The council of Haledon, N. J., has considered favorably the plan of having a new fire alarm system.

Port Huron, Mich., Delays Purchase—Action on the proposed purchase of a ladder truck in Port Huron, Mich., has been postponed to a later date.

Kimberly, Wis., Awaits Apparatus—Kimberly, Wis., is awaiting the delivery of its Seagrave 750-gallon pumper equipped with a booster tank. The apparatus costs $12,500.

New Baltimore, Mich., May Buy Apparatus—New Baltimore, Mich., is considering the purchase of fire apparatus estimated to cost from $6,000 to $10,000.

Toledo, Ia., Has New Service Truck—A. W. S. Mott service truck has been delivered to Toledo, Ia. Bonds will be issued to pay for the apparatus.

Fire District to be Formed Soon—Steps have been taken for the formation of a fire district by members of the Roblar Farm Center, near Santa Rosa, Cal.

Erie, Pa., to Extend Fire Alarm—Steps have been taken in Erie, Pa., to extend the fire alarm system to the northwestern section of the city.

Keystone, Ia., Farmers Buy Apparatus—A chemical car has been purchased by 215 farmers near Keystone, Ia. The membership fee was twenty dollars.

Pella, Ia., Considers Farm Protection—A meeting has been held with the farmers in Pella, Ia., to consider farm protection against fire.

Madara, Cal., Apparatus Damaged—While answering a fire alarm, fire apparatus in Madara, Cal., turned over and was badly damaged.

Weehawken, N. J., to Vote on Pay Increase—At the November election, voters in Weehawken, N. J., will consider increasing the pay of firemen.

Station Opened in Clarkburg, W. Va.—The new $65,000 fire station in Clarksburg, W. Va., was formally opened. An interesting program was prepared for the visitors.

New Fire Alarm Boxes Placed in Cicero—New combination fire alarm and police boxes are being installed in Cicero, Ill.

Bronsville, Tex., to Have Fire Alarm—A fire alarm system will be installed in Brownsville, Tex., at a cost of $31,000. The system will be installed by the Gamewell Co.

Fairfield, Pa., Orders Pump—Fairfield, Pa., has ordered a Boyer pump to be mounted in the present Brockway truck, and plan to have a new Chevrolet chassis equipped by the same company.

No More Steamers in Reading, Pa.—For the first time, no steamers appeared in the annual inspection of fire apparatus in Reading, Pa. The department is completely motorized.

Reeseville, Wis., Buys Rural Apparatus—Rural residents in the vicinity of Reesville, Wis., have purchased fire apparatus designed for rural protection. It will be manned by a crew of six men.

This Time a Girl Caused the Trouble—Police have finally found the one who has been causing the run of false alarms in Fort Madison, Ia. A thirteen-year old girl was accused of being the offender.

El Cerrito Fire Alarm Needs Repairs—Following a survey of the fire alarm system in El Cerrito, Cal., by the Gamewell Co., it was found that considerable repair work had to be done. Repairs will be made shortly.

More Men for Huntington Beach, Cal.—Three paid firemen have been added to the department at Huntington Beach, Cal. There are now five paid men and ten volunteers. J. K. Sargent is chief and H. J. Appleton, assistant chief.

Fire Station Finished in Galveston, Tex.—A fire station has been erected in the west end of Galveston, Tex. A large part of the material used in its construction was donated to the city.

N. Platte, Neb., to Receive Chemical Car—An order for a $4,000 chemical car has been placed by North Platte, Neb. The apparatus will carry four large chemical tanks, and is to be delivered in another month.

Dr. Archer Talks Over Radio in England—Dr. Harry Archer, honorary medical officer of the New York Fire Department, spoke at a radio station in England. Many of his friends on this side of the water were privileged to hear the address.

New Fire Alarm Boxes for Sioux City—Thirty-six new fire alarm boxes will be installed in Sioux City, Ia., in the down town section. Underground cables are now being placed. The fire alarm headquarters will be in the Municipal Building and the system will be completely installed by October.

California Marshals Issue Booklet—The California Fire Marshals' Association has issued a booklet on "Fire Protection and Fire Prevention," intended primarily for distribution in industrial plants. There are also directions in the booklet on how to guard against fires in the home.

Presents Fire Apparatus, After Rescue—In appreciation of being rescued from a burning building, a resident of Greenwood Lakes, N. J., presented the fire company with a new fire truck. In appreciation of the gift, the firemen presented the donor with a silver loving cup.

E. Liverpool, O., to Vote on Station—At the November election, East Liverpool, Ohio, will vote on issuing $200,000 bonds for the construction of a new municipal building and a fire station. The municipal building will cost $160,000 and the fire station $40,000.

Asbury Park Firemen Ask for Increase—Firemen in Asbury Park, N. J., have petitioned for an increase in pay. The total increase for the department will be $6,400 a year. First grade firemen now receive $2,000 a year and they want a $300 increase. Other changes are captain, $2,100 to $2,500; deputy chief, $2,500 to $3,000 and chief from $3,250 to $3,500.

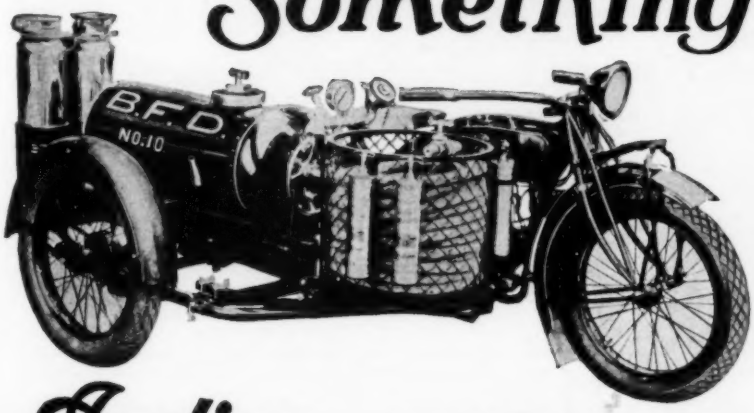
Cos Cob, Conn., Considers Station—A meeting was held in Cos Cob, Conn., to decide whether new plans should be drawn for the contemplated fire station or if the present drawing should be revised so that the construction cost will be brought down to $40,000. Bids received on the present plans were $18,000 in excess of the estimated cost.

Tacoma Awards Contract for Fireboat—Tacoma, Wash., has awarded a contract for the construction of a fireboat to the Coast Line Shipbuilding Company of Tacoma. The bid was $140,285, more than $7,000 below the estimated cost. The boat is to be completed within nine months. It will be of steel construction, ninety-six feet long and will be able to pump 10,000 g. p. m. The boat will draw six feet of water.

R. H. Mainzer Attends Seattle Fire—Robert H. Mainzer, honorary deputy chief of the New York Fire Department spent what he terms a "pleasurable hour" while in Seattle, Wash. He had stopped in that city on the way back from Alaska, when a second alarm came in for a warehouse fire. He commandered a friend's car and accompained Chief Mantor during the blaze. Chief Mainzer said, "I had a good time in Alaska but what is a camping trip to a good fire."

Changes Wanted in Portland Pension—Firemen are trying to have Portland, Ore, vote at the next election on changes in the pension law. If the changes are accepted, a widow of a fireman killed in action, who has been married to him for five years prior to the accident will receive a pension as long as she lives or up to the time she marries. The firemen will pay 2.5% of their salaries into the fund and the city will pay three-tenths of a mill. The present system was adopted in 1913 and it can be changed only by a vote of the people.

Something New in Fire Fighting Apparatus



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The above 750 Gallon Triple Combination Chemical and Hose Car is in service at the United States Veterans' Hospital which is located at Northport, L. I., and is safeguarding the lives of many of our boys who served in the World War against the world's greatest hazard, which is FIRE.

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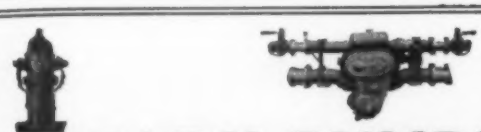

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PROPOSED IMPROVEMENTS

Pontiac, Oakland Co., Mich.—Architect now preparing plans for new fire station.

Woodland, Barry Co., Mich.—Funds are being raised for the purchase of a community fire truck.

Cascade, Cascade Co., Mont.—It is expected that a drive to raise funds for purchase of fire fighting equipment will be inaugurated at an early date.

Dayton, Montgomery Co., Ohio.—City voted bonds amounting to $200,000 for fire department extension work.

Gilboa, Putnam Co., Ohio.—A fire truck for village and rural fire protection is being discussed by local council.

McMinnville, Yarnhill Co., Ore.—City Council has authorized the issuance of bonds aggregating $5,000 for fire department improvements.

Jermyn, Lackawanna Co., Pa.—An appropriation was recently voted for purchase of fire alarm boxes.

Scranton, Lackawanna Co., Pa.—Director of Safety James Arigoni has recommended expansion of the fire alarm system to farther points.

Paragould, Greene Co., Ark.—City Council considering erection of $50,000 city hall which will contain a fire station.

Glendale, Maricopa Co., Ariz.—Authority for calling a $30,000 bond election for fire station and equipment is being considered by local council.

Hollister, San Benito Co., Calif.—City Council at September meeting takes no definite action on purchase of apparatus, but delays action until next regular session.

San Jose, Santa Clara Co., Calif.—City Manager and Finance Committee have been requested by the city council to consider the purchase of additional fire apparatus.

Wilmington, Los Angeles Co., Calif.—It is hoped by the Chamber of Commerce that funds will be available this year for the purchase and installation of additional fire alarm boxes.

Belvidere, Boone Co., Ill.—Fire protection for rural districts now under consideration. No definite plan of action decided.

New Haven, New Haven Co., Conn.—Board of Finance approved purchase of site on Park Street for new fire station.

Kansas, Edgar Co., Ill.—Village Board considering purchase of new piece of fire apparatus.

Mattoon, Coles Co., Ill.—Fire Chief Weaver recommended the purchase of a new ladder truck, a pumper and 3,000 feet of fire hose, at an estimated cost of $35,000.

Sheffield, Franklin Co., Iowa.—Funds are being raised for the purchase of a chemical car for fire protection in rural districts.

Theatre Fire Causes 100 Deaths

Nearly one hundred persons, mostly of the working class, lost their lives during a theatre fire in the largest theatre in Madrid on September 23. Rescuers found bodies so badly charred that they could not be recognized. Luckily the theatre was not fully occupied for the blaze broke out in an interval between acts.

The fire started on the stage and spread quickly to all parts of the building. So rapid was the fire's progress that an entire block was destroyed before the blaze could be checked. A defective electric circuit leading to a suspended electrical machine used to imitate lightning in the play, is believed to be the cause. When firemen arrived, the crowds were stampeding about. A number of persons jumped from upper windows and were killed when they struck the pavements below.

The theatre was one of the oldest structures standing in the capital. It was located on a narrow street that hindered operations of the fire department.

Some of those who escaped commended the bravery of an aged woman usher who held a flashlight at an exit and succeeded several times in controlling the mob by begging them to keep order. She was surprised by a sudden rush of flames and was burned to death.

The orchestra continued to play in an attempt to stop the disorder, but they too had to rush from the rapid march of the flames. Many were trampled and thrown down in the galleries.

The hospitals are caring for 350 injured persons, many seriously. Heaps of dead were found near the exits where they were suffocated by smoke. There were indications that patrons mad with terror used knives in an effort to stab a path to safety.

Pitiful scenes took place at the morgue which was besieged by persons seeking to find missing relatives and friends. There were a great number of bodies that could not be identified, leaving scores of persons in tragic doubt. One young man identified a body as that of his young wife and six others as members of his family. Entire families were wiped out and there were many children whose parents could not be found.

Civil guards and police surrounded the ruins of the theatre, keeping back throngs of people gathered in all the adjoining streets. The fact that no newspapers are published on Monday in Spain made the confusion the greater, and hundreds of persons came making inquiries at police, municipal and other official bureaus.

The poor bore the brunt of the tragedy. Whole families of laboring men had been packed in the upper galleries. The narrow stairways leading to these upper levels were quickly choked as fathers sought to fight a way through for their children. The orchestra and stalls were only half filled when the fire broke out and so the majority of these spectators were able to make their way out.

Rural Protection Bill Drawn in Washington

Fire chiefs, fire marshals and the Washington State Firemen's Association are sponsoring a bill to be presented before the state legislature to provide for fire protection in rural districts.

The measure as drawn provides that a fire district may be formed in unincorporated territory whenever twenty-five or more property owners desire to form such a section. The measure covers the topics of financing and other points of interest to those who will form the fire protection area.

Forty firemen and officials of Central Washinton cities met in Wapata, Wash., to form a permanent organization to be known as the Central Washington Association of Firemen. Chief Rex L. Putnam of Wapata was elected president and H. T. Robertson of Toppenish, secretary. The new association is behind the proposed measure.

Rockland County Firemen Meet

A meeting of the Rockland County Volunteer Firemen's Association was held at fire patrol quarters in Nyack, N. Y., on September 14. Captain Sidney Johnson, formerly of the New York Fire Patrol, gave an instructive talk stressing the importance of the proper selection of officers, the matter of discipline, and the value of wearing helmets on fire grounds. He advocated round table discussions and lamented that the meetings of volunteer associations were so cluttered up with routine business that very little time was left for helpful discussions. He warned against all companies attending one fire and against the practice of taking apparatus out of town to attend conventions.

Another speaker was Chief Leo Biedermann of Pearl River, formerly a member of the New York Fire Department. He offered to serve as instructor, without charge, if the associations conduct at training school. He criticised the school held last year as not sufficiently practical.

The October meeting will be held in Monsey, N. Y., and the November meeting in Nyack. At each meeting it is planned to have a speaker from the New York Fire Department, through the cooperation of Chief Biedermann.

CONVENTION DATES

Oct. 1-5—PENNSYLVANIA STATE FIREMEN'S ASSOCIATION. 49th Annual Convention, Uniontown, Pa. Secretary, Charles F. Clark, 411 Bellevue Avenue, Wayne, Pa.

Oct. 1-6—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 35th Annual Convention and School of Instruction for Firemen, Sacramento, Cal. Secretary, State Fire Marshal, Jay C. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.

Oct. 9-10—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual Convention (tentative date). Secretary, Chief Ray Tiller, Waterloo, Ia.

Oct. 9-11—RAILWAY FIRE PROTECTION ASSOCIATION. Annual Convention, Hotel Gibson, Cincinnati, Ohio. Secretary-Treasurer, R. R. Hackett, 1207 B. & O. Bldg., Baltimore, Md.

Oct. 11-12—GREAT LAKES ASSOCIATION OF FIRE CHIEFS. Annual Convention (tentative date). Secretary, Chief Frank C. McAuliffe, Chief of Patrols, 100 Desplaines St., Chicago, Ill.

Oct. 15-17—EASTERN ASSOCIATION OF FIRE CHIEFS. (Eastern Division, I. A. F. C.) First Annual Convention, Bellevue-Stratford Hotel, Philadelphia, Pa. (Just preceding I. A. F. C. Convention.) Secretary, T. Howell Johnson, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Oct. 17-20—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 55th Annual Convention, Bellevue-Stratford Hotel, Philadelphia, Pa. Exhibits at Second Regiment Armory. Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, Merchants' Exchange Bldg., San Francisco, Cal.; Chairman, Exhibits, Chief August Gerstung, Elizabeth, N. J.

Oct. 29-31—KANSAS STATE FIRE CHIEFS and FIREMEN'S ASSOCIATIONS and WOMEN'S AUXILIARY. 13th and 42nd Annual Conventions and 3d Meeting, respectively, Liberal, Kan. Secretary, Chief K. D. Doyle, Wamego, Kan.

Palisades Park, N. J., Delays Action—The council of Palisades Park N. J., has not taken any action on the question of new apparatus for the department. Firemen have urged immediate action because of the approach of cold weather.

Providence, R. I., Wants More Firemen—Providence, R. I., is contemplating the addition of twenty-five men to the department. The faction that has recommended that improvement has also suggested that the city purchase a triple combination pumper and a city service truck. The city will start work soon on a new fire station and will be ready for occupancy late in the spring.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

EACH CITY MUST SOLVE ITS OWN TRAFFIC MAZE PROBLEM

Legislation Should Be Secured to Govern Conduct of Motorists at Fires and Laws Should Then Be Enforced—Model Traffic Ordinance

LEGISLATION is the only means that will solve the traffic problem that confronts fire chiefs in many cities. Not only must necessary law be written into the city code, but the rules passed must be strictly enforced.

The chief of the fire department should have full and complete charge of all traffic directions at the fire and during the course of the fire. He should have this power by virtue of a city ordinance. The willingness of police authorities to cooperate with the chief to some extent mitigates the situation and lends tolerence to its existence, but it does not lessen the necessity for full legal control. He is the only man, by experience, who is qualified to estimate the space that would be required for the proper manouvering of his companies.

In speaking before a gathering of fire chiefs, Chief George M. Mantor of Seattle, Wash., said:

"Pending concerted action toward a national or state traffic code, each community must be considered as a separate problem. Each fire chief must fight the matter out with his local legislative bodies.

When the traffic code was recently revised in Seattle, he caused certain laws to be written into the code, which together with the state code, made a fine traffic ordinance. Some believe this to be the finest code on this subject in the country. Sections of the code follow:

PROVISIONS OF THE ORDINANCE

"Fire Requirements"

Fire Zone: There is hereby established about the scene of every fire during its course a "Fire Zone," which shall consist of all public streets within a radius of 300 feet or more from said fire, and in every case shall include the two closest street intersections.

All traffic, including street cars, locomotives, railroad cars, vehicular and pedestrian, within a "Fire Zone" shall stop and it shall be unlawful for any person to move, operate or start to move or operate any vehicle except upon orders of the Chief of Police or the Chief of the Fire Department or their authorized agents.

It shall be unlawful to enter a "Fire Zone" or to stop, stand or park in such a manner as to hinder the apparatus of the Fire Department in entering or leaving any "Fire Zone."

Such "Fire Zone" shall remain in existence until such time as the Chief of the Fire Department or his authorized agent shall declare the emergency past.

Running vehicles on, over or across equipment of the Fire Department:

It shall be unlawful for any person to operate any vehicle, street car, locomotive or railroad car on, over or across any hose, ladders, or other equipment of the Fire Department.

Following Apparatus Responding to Alarms of Fire

It shall be unlawful for the operator of any vehicle to race or follow any apparatus of the Fire Department closer than 600 feet, when the same is responding to a call.

Right of Way

Vehicles of the Fire Department, when going to, returning from or on duty at a fire, shall have the right-of-way over all vehicles and persons.

Every operator of a vehicle, upon the approach of the apparatus of the Fire Department, shall immediately proceed to the right hand curb and come to a full stop, standing parallel thereto. At points where fire signals are located, when the alarm sounds or fire signals are given, all operators of vehicles within sight or hearing thereof, shall follow the directions indicated above and shall remain so stopped until the fire signals cease sounding, and then proceed only in the event that no fire apparatus is approaching, except where traffic officers are stationed. At street intersections where traffic officers are stationed, said traffic officers may flag such vehicles through as obstructs the passage of the fire apparatus.

It shall be unlawful to unload passengers during such time as the fire apparatus is approaching, or while the signals or fire warnings are being sounded.

It shall be unlawful for any person operating any vehicle, street car, locomotive or railroad car, in or upon any street, or for any person standing or walking in any such street, to fail, refuse or neglect to allow the right-of-way to apparatus of the Fire Department when same is going to, on duty at, or returning from a fire.

Hydrants: No person shall, in any manner, obstruct the use of any hydrant, or have or allow to be placed, any material in front thereof, from the curb line to the center of the street and to within ten feet from each side thereof.

Exit of Fire Stations: No person shall stand or park any vehicle within fifty feet of the exit of any Fire Station.

Obstructing Fire Alarm Boxes: It shall be unlawful for any person to place, or cause to be placed, any article or thing so as to interfere with or obstruct free access and approach to any fire alarm box.

Removal of Obstructions to Fire Extinguishment: Commanding officers at fires shall have the authority to remove from the "Fire Zone" obstructions to the extinguishment of fire.

Hindrance to Firemen: It shall be unlawful for any person to willfully offer any hindrance to any fireman in the performance of his duty at a fire.

Defacing Property of the Fire Department: It shall be unlawful for any person to injure, deface or destroy any property of the Fire Department.

Power to Commandeer: It shall be lawful for the Chief of the Fire Department and his authorized agents to require the aid of the operator of any vehicle, in drawing or conveying any apparatus, equipment or tools of the Fire Department to a fire.

Protecting Against Dangerous Conditions: The Chief of the Fire Department or his authorized agent may, when the walls of a burned building are unsafe or in such condition as to endanger traffic on public streets, or when any pole, chimney, spire, steeple, electric wire or other thing or object, endangers human life or property in the public streets, rope, fence, or wall

Berlin Firemen Demonstrate Fireproof Suits

The use of a fireproof suit has been demonstrated by the Berlin fire department. The suit has a spray to cool the section immediate to the fireman. A special small diameter hose conveys water to the spray. If the tendency for equipping the fireman with additional equipment continues, the poor fire-fighter will soon resemble a pack horse.

WHEN YOU NEED LIGHT!!

The "Excellight"

Patented Mar. 1, 1921

DURABLE

SIMPLE

ECONOMICAL

WATERPROOF

NON-CORROSIVE

INDISPENSABLE

A FAVORITE AMONG THE FIRE FIGHTERS

A POWERFUL PORTABLE ELECTRIC SEARCHLIGHT

The EXCELLIGHT is always ready, safe, powerful, economical and simple. It is moisture and waterproof, which eliminates short circuits and greatly increases the life of the batteries. The EXCELLIGHT is indispensable, especially around places where inflammable materials are stored or manufactured.

With ordinary use the batteries will last for many months and can be replaced at small cost. Batteries are standard.

Write for sample, full information and net prices.

THE NATIONAL MARINE LAMP CO.

Dept. F. Forestville, Conn.

Many Prominent Fire Chiefs Endorse

"Shuredry" WATERPROOFED **Salvage Covers**

"SHUREDRY" Covers stand the gaff. They give unfailing satisfaction — *always* . . . as proof of which, read what Chief Cody of the Atlanta Fire Department has to say of them:

"We have been using 'Shuredry' salvage covers in the Fire Department for a period of twenty years, or more, and have received wonderful service from them. It is my opinion that your covers are superior to any on the market.

"It is with pleasure that I recommend your product to anyone desiring service and satisfaction."

Cost less, weigh less, and easier to handle and spread than rubber covers. Do not crack when folded and left on shelf.

Write for sample and price.

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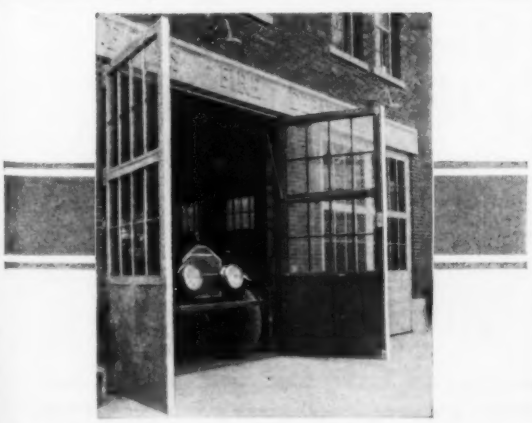

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Designed to take care of the practical problem of constant opening with the swiftness that is necessary in the nature of their use. Ability to meet this demand plus permanence, fine appearance and moderate cost are rapidly placing Truscon Doors on important fire department buildings throughout the country.

TRUSCON STEEL COMPANY, Youngstown, Ohio

TRUSCON
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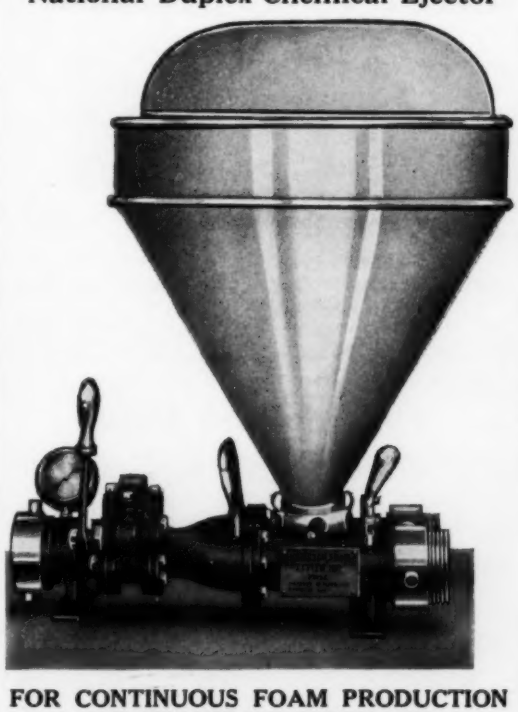
FIRE DEPARTMENT STEEL DOORS

National Duplex Chemical Ejector



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Agents and branches in all principal cities.

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(Reg. U. S. Pat. Off.)

FIRE HYDRANTS

for

DOMESTIC

and

HIGH PRESSURE

Service

NOTE—

The positive waste value.

All operating threads are dry, being above the stuffing-box.

No toggles, no small, quick-wearing parts.

All moving parts are bronze or bronze-bushed.

The outside casing permits replacing a two-way standpipe with a steamer and two-way standpipe without digging up the ground.

An easily installed
EXTENSION SECTION
readily adapts them to new grade.

VALVES and BOXES
CAST IRON PIPE
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MAXIM FIRE APPARATUS

If your apparatus is Maxim-built it will prove dependable and reliable at all times.

Complete information upon request.

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Metropolitan Sales Agents:
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BI-LATERAL FIRE HOSE

THE BI-LATERAL FIRE HOSE CO.
230 West Randolph St., Chicago, Ill.

The City of Wheeling just purchased 5,000 feet of Bi-Lateral Fire Hose coupled with rocker lug couplings. This city purchased 5,000 feet last year and it is believed that as soon as their department is equipped with this improved construction in fire hose they will be able to cut their hose expense to less than half of what it has been previously. Let the BI-LATERAL FIRE HOSE COMPANY tell you why this may be true.

Quaker Fire Hose Stands Severe Tests

The endorsement of fire departments in principal cities of the country is convincing proof of the reliability of Quaker Fire Hose in hard fire fighting service.

Made with a special tube and covered with a rugged circular solid woven jacket to withstand highest pressures.

QUAKER CITY RUBBER CO.
Wissinoming, Philadelphia

Branches: New York, Chicago, Pittsburgh, San Francisco

COREY

Hydrants as manufactured by "Rensselaer" are being used to fight fire in every State of the Union. Made of the very best material and workmanship.

"The Rolls-Royce among Fire Hydrants"

RENSSELAER VALVE CO.,
TROY, N. Y.

off parts of public streets and private property adjacent thereto and plan suitable signs marked "Danger" about same or red lights at night and it shall be unlawful for any person to remove, mutilate, tear down or otherwise damage any sign, fence, wall or rope or to walk, or to drive, operate or move any vehicle inside said lines, fences or walls.

Establishing Fire Lines: During any emergency requiring the services of the Fire Department, the Chief or his authorized agent is authorized to establish fire lines on a public street or private property by roping off same, or by stationing a fireman in uniform, or a police officer to direct traffic, and it shall be unlawful for a person to disregard or fail to obey the orders of said fireman or police officer or to run over said rope or to operate any vehicle inside fire lines.

Ropes for Fire Lines: The Chief of Police shall maintain on hand, in readiness for immediate use, a sufficient quantity of rope for establishing fire lines and upon a fire occurring, requiring their establishment, shall dispatch sufficient patrolmen in charge of an officer, together with fire line ropes, to said fire, where said officer in charge of said patrolmen, shall report to the Chief of the Fire Department or authorized agent, placing his detail under his command, and shall establish fire lines and direct traffic in accordance with his orders.

It shall be unlawful to stand or park any vehicle at any time, except while actually loading or unloading, on that portion of the street contiguous to and opposite any outside court, corridor, passage, fire escape, exit or entrance door or any other space adjacent thereto, or any door opening in an outer wall of any building containing in whole or in part any theatre, motion picture theatre, public auditorium, church, dance hall or any other place of public assembly through which the public must pass to leave such building. And it shall be incumbent upon and the duty of, the owner or agent of the property used for the purpose herein specified, to designate such prohibited areas by marking the curb line adjacent thereto with white lines, not less than four inches (4") in width, or by placing stanchions or signs satisfactory to the Chief of Police of the City of Seattle.

Equipment: It shall be unlawful for any person to use on any vehicle or bicycle any gong or siren whistle unless such vehicle is used as an ambulance or is operated by the Police or Fire Department, or an explosion whistle except on vehicles equipped with solid tires.

Parades: No person whether a pedestrian, equestrian, driver or operator of a vehicle of street car shall break through or interrupt any regularly ordered parade or passage of the military or naval forces of the United States or of the National Guard of the State of Washington; Provided, that such parades shall not interfere with the governmental functions of the Fire and Police Departments and the carriage of the United States mails.

Railroad and Street Cars: Street railway cars shall be entitled to the track and to the right-of-way thereon at all times, except as to apparatus of the Fire Department, vehicles of the Police Department, vehicles carrying United States mail, ambulances, and repair vehicles of public service companies and of the City of Seattle when responding to emergency calls.

Vehicles in General: A driver already upon a street shall have the right-of-way over a driver entering at a point other than a street intersection, and it shall be the duty of such driver to yield the right-of-way to the driver already upon the street; Provided, that the foregoing shall not apply to the apparatus of the Fire and Police Departments.

No driver shall enter any street from any point other than a street intersection at a rate of speed faster than five miles per hour, nor without first attracting the attention of approaching pedestrians and vehicles by signaling with sounding device; Provided, that the foregoing shall not apply to the Police and Fire Departments.

The following vehicles shall have the right-of-way, in the order named, in the use of all streets, viz.:

Apparatus of the Fire Department; vehicles and motorcycles of the Police Department; vehicles carrying United States mail; and, succeeding the foregoing, ambulances and repair vehicles of public service companies and of the City of Seattle when responding to emergency calls.

It shall be unlawful for any person to stand or park any vehicle within ten feet of a fire hydrant, within six feet of a United States mail box, or within fifty feet of the vehicle exit of any Police or Fire Station.

Portland Recommends Purchase of Aerial—The city purchasing agent of Portland, Ore., has recommended the purchase of an Ahrens-Fox 85-foot aerial ladder. At a recent fire, a ladder truck broke down and Chief Grenfell recommended that another be purchased.

San Francisco Bureau Supported

The San Francisco Junior Chamber of Commerce was given credit for the establishment of the Fire Prevention Bureau by Capt. Theodore Trivett, technical head of the Bureau of Fire Prevention and Public Safety, at a luncheon held September 6th under the auspices of the junior organization.

"Due to the Fire Prevention Committee of the Junior Chamber of Commerce we are in a position now to operate as a Fire Prevention Bureau should," declared Capt. Trivett during the course of his talk.

The lunch-meeting was a "get-together" affair, attended by members of the Junior Chamber of Commerce Fire Prevention Committee and the inspectors of the Fire Prevention Bureau, representatives of the Board of Fire Commissions, Fire Underwriters and other organizations.

Thomas Larke Jr., chairman of the junior organization committee, outlined the work of the committee in enlisting support from the women's clubs, parent-teachers' organizations and other civic organizations, resulting in the appropriation of $15,000 by the Board of Supervisors for seven additional inspectors in the Bureau. Fifty applicants appeared before William Sherman, president of the Board of Fire Commissioners, Thomas Larke Jr., and assistant chiefs of the fire department. Seven were selected, five of whom were the unanimous choice of the examiners. Full responsibility for the operation of the Bureau was placed on Capt. Trivett.

Capt. Trivett detailed the early history of the Bureau; how it was organized, how it did good work for three or four years, and how "it died due to lack of funds." He spoke enthusiastically of the support given him by the Junior Chamber of Commerce in his work of fire prevention. The Bureau has been in existence now, practically speaking, for two months, and work is progressing favorably.

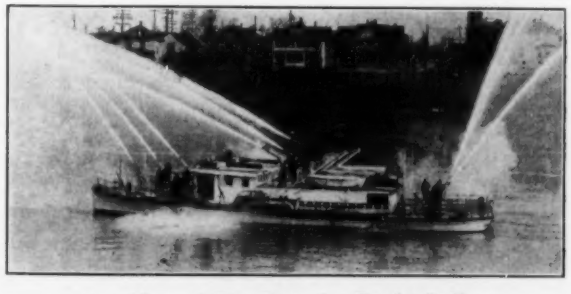
The bureau is making an effort to give each hospital in the city a thorough inspection, and to work closely with the hospitals in the correction of any hazardous condition that might exist. One man is detailed to the schools and will continue that work until every school in the city has been carefully inspected both as to hazards, construction and exits, and until all dangers have been eliminated.

The down town district of the city is being systematically and thoroughly inspected. One man has been detailed to inspect the outlying mercantile districts of the city. Since July 1, 1928, according to Capt. Trivett, the Bureau has made 1,360 inspections, and has found 1,267 violations of the fire and building laws. Some 591 additional inspections were necessary to obtain correction of 531 of these violations, and the remainder will be followed into the courts if necessary to see that the conditions are eliminated.

Following Capt. Trivett's report, there was a general discussion of the activities for Fire Prevention Week, October 7th to 13th. The Bureau and the Junior Chamber committee will endeavor to work out plans so that: five minute talks on Fire Prevention will be given in all schools and before all the luncheon clubs; stores will be asked to install fire prevention window displays; a short message on Fire prevention will be broadcast, and homes will be inspected by the Bureau on request.

McDill Resigns as Ounsmuir, Cal., Chief—J .F. McDill has presented his resignations as head of the fire department of Ounsmuir, Cal. The city refused to increase his salary and the resignation followed.

Ft. Madison, Ia., Firemen Have Rest—Firemen of Fort Madison, Ia., have enjoyed a vacation. The city has not had a fire during the past thirteen weeks and Chief Williard has commended the residents for practicing fire prevention methods.



New Fleet of Fire Boats for Portland, Ore.

The three new boats, the "David Campbell," "Mike Laudenklos" and "Karl Gunster," are here shown lashed together during recent tests.

FALSE ALARMS

—Drawing by "Art" Espey

Ladderman who had been detailed to ventilate: "Well that saves me a lot of work opening up."

A CHANCE TO JUMP

A fireman was inspecting a building that was being converted to house some of the girl college students. Everything passed inspection until the fireman chanced to look out of the window.

"Where are your fire escapes?" he asked.

The owner of the building replied, "Don't you know that this is leap year?"

THEY BOTH LOSE

"What's the matter there, Collins, you look as though you lost your best friend and said good bye to your last cent?"

"It's not as bad as that," was the reply as the polishing process stopped, "but the lieutenant lost his hat."

"Gee that shouldn't worry you. That should be his worry."

"Ah but you don't understand. I was wearing it when he lost it."

MORE EXPERIENCED

It was the interval between luncheon and the afternoon session at the Central Valley Association convention. Delegates were clustered in groups, some telling of their experiences but most men telling stories.

In one section, there were several persons who wanted to offer what was considered the best story in the respective fire houses.

Some one in the crowd shouted, "Let that fellow tell his story. He ought to know some good ones—he's bald headed."

NO LONGER FRIENDLY

Over in a German city, the fire department is conducted according to military plan. The men are governed by strict army discipline and they have frequent inspection.

One day a fireman received a severe lecture from his lieutenant for not having his uniform in a neater condition.

When next they met, the lieutenant was surprised that he was not accorded the courtesy of a salute. He called to the fireman and wanted to know why the breach of department rules. The reply was brief:

"I thought that you was still mad at me."

PHYSICALLY NOT PERFECT

In a large eastern city, recruits were called out to try for the football team that would meet with the Los Angeles team in the East in October. Of course, it was impossible for all candidates to be considered. But MacDougall was discarded in the first lot.

Friends in his company were sore. One said:

"They went and rejected a big, husky like MacDougall."

"Sure! He's Scotch," said one of the athletic committee.

"Well it's a shame to turn a man down on account of his nationality."

"Nationality nothing. He wouldn't loosen up his muscles."

NOT FOR SHOW

The whole town was awe-stricken when the school house fire could not be checked. The old building blazed like tinder. Jim fell to the ground when a beam gave way. Friends rushed him to the hospital where he was placed immediately on the operating table.

The doctor turned to the nurse and said:

"Bring in ethyl chloride."

The fireman became excited and pulled the doctor to him as he whispered, "Please doctor, don't bring a woman in here."

No one has ever complained of a parachute not opening.

ARE YOU A SUCCESS?

Would you like to have an income that would enable you to live well, dress well and have a few of the comforts of life—now? Would you like to have a fine home in the city, a country home, and servants to care for your needs? Would you like to be famous, a success in life, and so forth? Would you like to take a trip around the world, traveling with the greatest possible luxury and return with loads of souvenirs? Would you? You would? Then shake, brother, our desires are identical.

TOO GREAT A RISK

Sprague was injured at a fire and as soon as all the excitment had subsided, he was ordered to report to the city physician for examination. The fire company rolled back to the fire house but Sprague was conveyed to the doctor's office. On the physician's door was a sign, "11 to 3." The fireman started to go back.

"Hey you," shouted his friend, "where are you going?"

"I'm going home," replied the fireman, "the odds are too great here."

THE MAIN QUESTION

Following a bad department store fire, the chief had received a number of unsigned letters from residents telling him how they would have fought the fire and mentioning how little they regarded his ability in such matters.

His secretary had laid the morning mail on the desk for the chief's perusal and the first letter was another one of the sarcastic messages.

"Dam it," said the chief, "here's another one of those anonymous letters."

"From whom?" asked his secretary.

Courtesy, Life

Nothing Like Polite Firemen

"Good evening, madam, so sorry to disturb you—and would you mind leaving the water running in the tub?"

Your Catalog Page

Fire Protection Equipment and Supplies

1 Acid Siphons.
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17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Caps, Firemen's.
23 Chains, Non-Skid, Fire Apparatus.
24 Chassis for Fire Apparatus.
25 Chemical Engines and Tanks.
26 Chimney Cleaning Compounds.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equipment, Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Fire, Soda & Acid.
35 Extinguishers, Fire, Tetrachloride.
36 Extinguishers, Fire, Foam.
37 Extinguishers for Chimney Fires.
38 Fire Boat Nozzle Equipment.
39 Fire Department Supplies, General.
41 Fire Exit Devices, Door Opening.
42 Fire Alarm Posts.
43 Fire Escapes, Portable.
44 Fire Escapes, Rigid.
45 First Aid Equipment.
46 Flare Lights.
47 Flashlights, Hand.
48 Foam Liquid for Extinguishers.
49 Gas Masks and Respirators.
50 Gas & Smoke Helmets.
51 Gasoline & Oil Handling Equipment.
52 Goggles, Firemen's.
53 Helmets, Metal, etc.
54 Hose Carts, Reels & Racks.

Help Wanted?

This page is here to make it *convenient* for you to get complete specifications and prices from *reliable* manufacturers of equipment needed for your department. It is *your* page to use freely without any obligation.

To get the information you want, just mail in the coupon below with your name and address and numbers that indicate the equipment listed below on which you would like descriptive literature.

We will then notify reliable manufacturers of your interest in such equipment and request that they send you complete information. They will gladly do this and it will be a pleasure for us to help you in this way. No charge whatever! So go to it. Help wanted?

For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet.

55 Hose Clamps.
56 Hose, Fire.
57 Hose, Chemical.
58 Hose Holders.
59 Hose Jackets.
60 Hose Standardization Tools.
61 Hydrant Draining Pumps.
62 Hydrants, Fire.
63 Jacks for Fire Trucks.
64 Jacks, Shoring & Prying.
65 Ladders, Fire.
66 Lightning Arresters.
67 Motorcycles, Fire Dept. Equipped.
68 Nets, Life.
69 Nozzles, Pipes & Misc. Brass Goods.
70 Packings, Pumps.
71 Pads, Pole Hole.
72 Paints, Fire Resisting.
73 Priming Ether, Motor
74 Pumping Cars, Standard.
75 Pumping Cars, Foam.
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77 Pumps, Fire Service, Stationary.
78 Pumps, Portable, for Fire Protection.
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98 Tetrachloride Chemicals.
99 Thawing Equipment, Hydrant.
100 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
101 Tractors.
102 Traffic Clearing Systems.
103 Triple Combination Pumping Cars.
104 Uniforms.
105 Water Towers.
106 Wheels, Cushion.
107 Whistles, Fire Alarm, Compressed Air.
108 Whistles, Fire Alarm, Steam.
109 Whistles, Fire Apparatus.
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225 West 34th St., New York City.

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